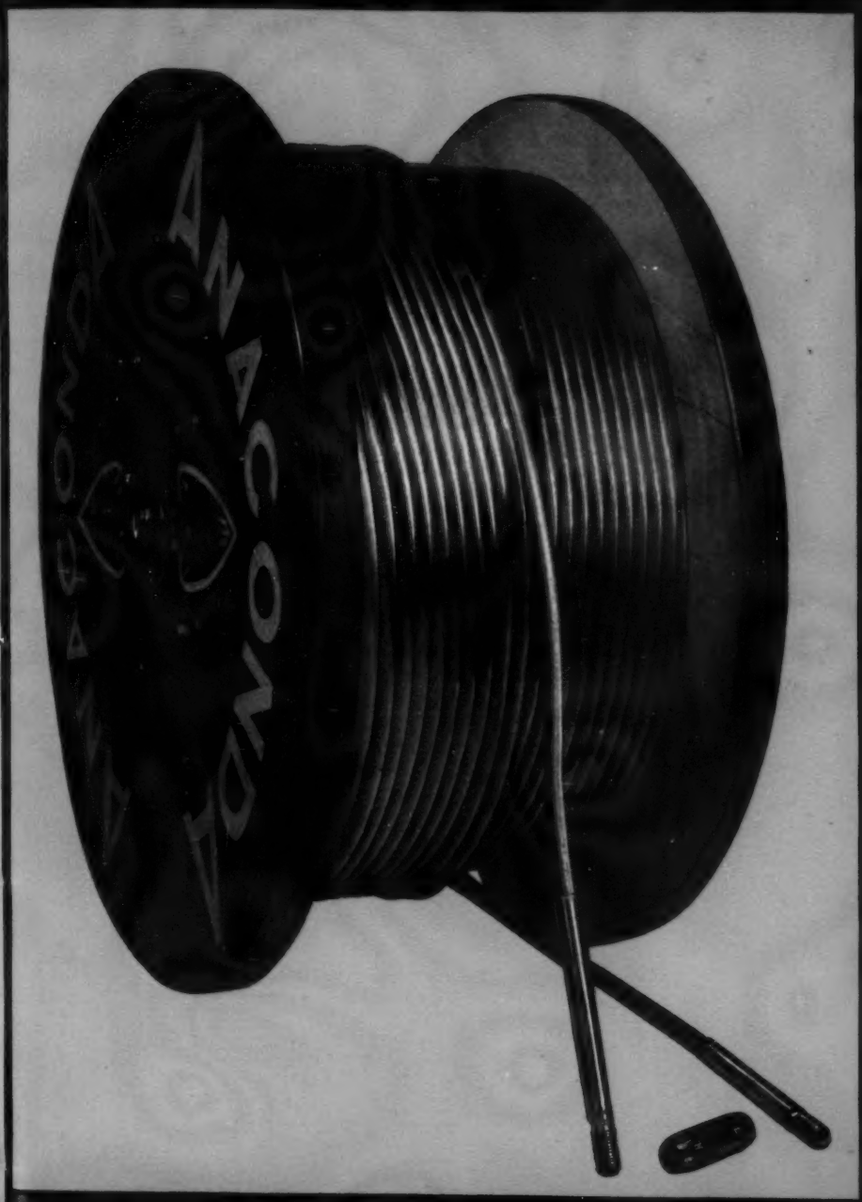
ELEVENTH ANNUAL LOAD BUILDING AND MERCHANDISING NUMBER

ELECTRICAL WEST

WITH WHICH IS CONSOLIDATED THE JOURNAL OF ELECTRICITY

McGraw-Hill Co. of Calif. OCTOBER 1, 1932 Twenty-five Cents per Copy



ANACONDA
HOLLOW
CONDUCTORS
for
high voltage
transmission

ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.

ANACONDA WIRE & CABLE COMPANY

Pacific Coast Offices:

LOS ANGELES · SAN FRANCISCO · SEATTLE

Pacific Coast selling agents for Bare and Weather-Proof Wire and Power Cable — General Electric Supply Corporation

USING A REVOLUTIONARY DEVELOPMENT WE NOW OFFER A

Super-Powered two cylinder

**Genuine* FRIGIDAIRE

with 1/4 greater food space

TO RETAIL AT

$112 *(PLUS FREIGHT)*

DELIVERED, INSTALLED
AND FEDERAL TAX PAID

Again Frigidaire makes an announcement that not only widens the sales and profit opportunities for Public Utility Companies, but enables them to take the lead in their communities by offering a refrigerator of outstanding quality at a price within the reach of almost every family. With Frigidaire, Utility Companies can now make a distinct contribution towards speeding business recovery by making it possible for a vast number of people to secure a reliable refrigerator at a price that enables them to buy now.

Nor is that all. This *genuine* Frigidaire at $112 also gives you one of the most important selling points ever built into an electric refrigerator—*one-fourth more food space in the same sized cabinet.*

This means that you can offer your customers a *roomy* refrigerator—one that permits quantity buying and brings about greater savings—one with plenty of room for everything.

And Frigidaire has the extra power to keep this extra food space properly chilled. Every Frigidaire has *two* cylinders instead of the usual *one!* This means a wide margin of cooling safety made possible by *two* cylinders instead of the usual *one.*

So with Frigidaire, you offer the best known refrigerator on the market, with all the important features that have made Frigidaire famous—at the lowest price in Frigidaire history. Frigidaire Corporation, Subsidiary of General Motors Corporation, Dayton, Ohio.

***WARNING**

A cheap, underpowered and poorly constructed refrigerator at any price is expensive for you to sell. Customer satisfaction—your greatest asset—is assured with this genuine Frigidaire. Nothing has been "cheapened"—it is the same Super-Powered, two cylinder Frigidaire made and guaranteed by Frigidaire Corporation, a subsidiary of General Motors.

**Genuine* FRIGIDAIRE

THE GENERAL MOTORS VALUE IN THE REFRIGERATION INDUSTRY

ELECTRICAL WEST, entered as second class matter at the post office at San Francisco, under the Act of Congress, March 3, 1879. Published at 883 Mission Street, San Francisco, California, thirteen times a year as follows: January 1, February 1, March 1, April 1, May 1, May 15, June 1, July 1, August 1, September 1, October 1, November 1, and December 1.

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DRUM UP *New Range*

FALL IN WITH HOTPOINT'S GREAT CHRISTMAS PARADE. ENJOY THE KIND OF SALES YOU HAVE WANTED ALL YEAR

NOW General Electric's Great Christmas Parade of Sales Plans for the Hotpoint Electric Range brings to a climax the rapidly growing public interest in electric cookery. All that has been done by the National Electric Cookery Council and Hotpoint's vast advertising program has been brought to a focus for you in this Christmas Campaign. Seize the opportunity to step up sales during the Christmas buying season. Send to N. E. C. C. headquarters for plan book. Investigate the Hotpoint program before you decide on any Christmas Campaign.

Now Hotpoint scores again as the easiest selling electric range. More people know Hotpoint. More people own Hotpoint than any other electric range. More people prefer Hotpoint. Make your fall and winter selling effort pay full returns.

Help your salesmen get more range sales from same number of interviews. Concentrate on General Electric Hotpoint Range.

General Electric's plan is four big steps ahead in selling electric ranges. Get in step with this range-selling program. Be sure to see the "G-E Hotpoint Christmas Parade" (a new book which explains the plan) before you make any arrangements for fall or winter sales activity.

Now a Complete Sales Course for Range Salesmen

Let the new General Electric Hotpoint Home Sales Training Course furnish your range salesmen with new ideas, new inspiration and new sales punch. Prepared in collaboration with the La Salle Extension University, this remarkable program is unique in the industry. It tells how to find electric range prospects. Gives certified, sure-fire sales talks. Tells how to overcome objections and how to close the sale. Nothing like it has ever been published before. Learn all about it. Write us today. Get all the details on this specialized home training course. Edison General Electric Appliance Co., Inc., 5612 West Taylor Street, Chicago, Illinois.

GENERAL ELECTRIC

ELECTRIC *Hotpoint* RANGE

Business THIS FALL

Send to N. E. C. C. Headquarters for Plan Book shown at left

MAIL THIS COUPON TODAY

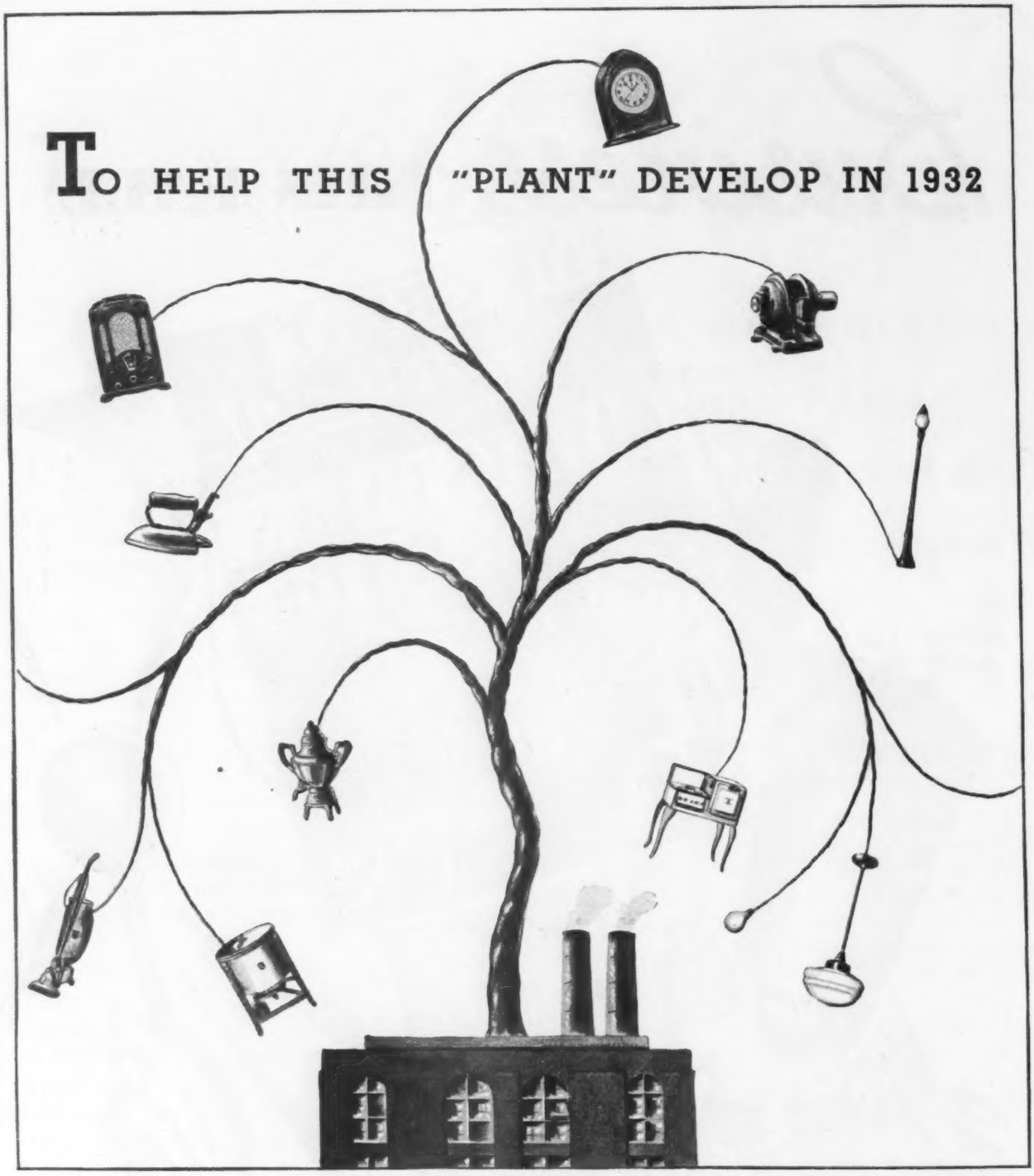
Edison General Electric Appliance Co., Inc.
5612 W. Taylor Street, Chicago

☐ Please send me your book, "The Great G-E Hotpoint Christmas Parade". ☐ Send me circular describing sales training course.

Name .....

Company .....

Address .....*City & State*.....



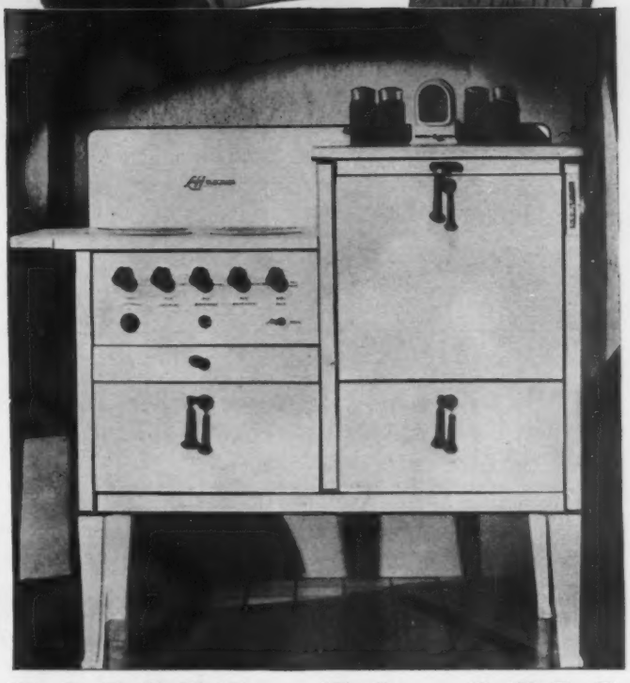
No small factor in the development of industry in 1932 will be the work of great national electrical distributors . . . The scope of such a distributor—Graybar—is as broad as the industry itself . . . To the utility it offers a convenient source of construction materials—to the contractor, a source of any of 60,000 electrical items—and to the dealer, a complete line of quality electrical appliances . . . At the same time, this distributor serves the entire industry by aiding the cause of more complete wiring and by supplying and encouraging the use of the load-building and job-making fruits of electricity everywhere—whether they be electric lights for commerce, motors for industry, or appliances for the home.

GraybaR

OFFICES IN 76 PRINCIPAL CITIES. EXECUTIVE OFFICES: GRAYBAR BUILDING, NEW YORK, N. Y.

SAN FRANCISCO SEATTLE LOS ANGELES OAKLAND SPOKANE PORTLAND TACOMA

Resale!



EASIER TO SELL

"Never consider a range sold till it is in the home of a user."

That's the *L&H* policy . . . the basis of the *L&H* merchandising program. Every *L&H* dealer is provided with everything possible in the way of actual useable sales help.

When you learn the whole story of the *L&H* plan you'll begin to see why *L&H* is the leader in distribution of electric ranges through independent channels.

There are some desirable territories still available. Mail the coupon for information.

P. F. Ross, 715 Bryant St.	San Francisco, Cal.
Thompson & Holmes, Ltd., 171 Bluxome St.	San Francisco, Cal.
Sunset Electric Company, 121 N. 9th	Portland, Oregon
Brown-Johnston Company	Spokane, Wash.
Ungar & Watson, Inc. 1363½ So. Figueroa St.	Los Angeles, Cal.
Intermountain Electric Co.	Salt Lake City, Utah
Sunset Electric Company, 1530—11th Ave.	Seattle, Wash.
Yakima Hardware Company	Yakima, Wash.
J. R. Bradley Co.	Reno, Nevada

L&H Advanced ELECTRIC RANGES

A. J. LINDEMANN & HOVERSON COMPANY

MILWAUKEE . . . WISCONSIN

2626 W. Washington Blvd., Chicago, Ill. • 136 W. 42nd Street, New York, N. Y.

715 Bryant Street, San Francisco, Calif.

A. J. Lindemann & Hoverson Company,
607 W. Cleveland Ave., Milwaukee, Wis.

I am interested in selling *L&H* Electric Ranges.

NAME _____

TOWN _____

STATE _____

National Electric Range Promotion *now actively* under way

YOUR RICHEST OPPORTUNITY FOR BUILDING REVENUE

THE outstanding fact proved by the depression is — that domestic business stabilizes earnings . . . that domestic load is the backbone of central station revenue.

The electric range is the greatest builder of domestic load. Every electric range sold is approximately equivalent to adding 4 customers to your lines. It increases average domestic load by from 1500 to 1800 KWH annually. It adds approximately $50 a year revenue per customer.

But the electric range market is still 95% unsold. 11,000,000 homes have electric range rates— only 1,000,000 cook electrically. Nationally, only 5 out of every 100 domestic customers use electric cookery. Here is a rich, new —practically virgin market.

Now — a nationally organized effort to sell electric ranges

Now, under the National Electric Cookery Council, the entire electric industry is mobilized for the first time in a united drive to sell electric cookery.

Local Electric Cookery Councils are really the spear heads of this drive. Operating through *them*, coördinated on a national basis, the entire industry—manufacturers, dealers, contractors, and central stations will coöperate vigorously to sell *the second million ranges* — to add 5 more range users per every 100 domestic customers to power company lines — to increase national domestic output approximately 1,750,000,000 KWH annually.

It took 15 years of individual effort to sell the electric ranges now in use. This Plan by collective effort will sell the second million in 3 years.

The success or failure of this Plan rests in your hands. Upon you, the executives of the Light and Power Companies will devolve the task of bringing into being the Local Councils in your cities. We count upon your coöperation.

• • •

For active coöperation and assistance, address your inquiries to National Electric Cookery Council, 420 Lexington Avenue, N. Y. C.

NATIONAL ELECTRIC COOKERY COUNCIL

420 Lexington Ave., New York, N.Y.

MACY'S ARE MAKING A CLEAN-UP *with this new iron!*

IN just three days, Macy's, New York, have sold more Hotpoint *Feather Weight* Irons than their total sales of lightweight irons, all makes, for the past six months. This proves how right we were when we announced this sensational new iron to the trade.

We said . . . here is the greatest iron General Electric ever built. An iron made especially to meet the growing demand of women everywhere for the new large-but-light irons. An iron startlingly low in price . . . *two dollars less* than any other iron of its kind now on the market—and the lightest in weight.

We predicted dealers would make a killing. They are beginning to do just what we predicted.

And no wonder! The *Feather Weight* retails for only $5.95. Other irons of this type cost around $8.00. There's one of the biggest reasons in the world why women are buying it. And there are plenty of other reasons.

Its arm-sparing lightness, for one thing. Mind you, the *Feather Weight* is a full-size iron—as big as the ordinary 6-pound iron—but only half the weight. *Only 3 pounds!* Its heat does the work of a heavier iron—and there's so much less weight to lift.

It is adjustable to a dozen different heats, and automatically holds the heat it is set for. It has double button-nooks, the patented Hotpoint thumb-rest, the famous *Calrod* heating unit—and a rust-proof sole plate that will not roughen or stick.

In addition—the *Feather Weight* has plenty of advertising back of it. The October 8th issue of the Saturday Evening Post carries potent full-page news about it. So do the October issues of Good Housekeeping and Better Homes and Gardens—magazines that are read by women who pass your store every day. Here is your chance to make a swift and sweet profit—see your distributor *now!*

GENERAL ELECTRIC

Hotpoint

GENERAL ELECTRIC CO.—MERCHANDISE DEPARTMENT—SECTION E-3910, BRIDGEPORT, CONN.

OPPORTUNITY No. 2

The new G-E "Granville" Coffee Maker—which makes perfect coffee every time—is your chance to get ready cash from discontented coffee drinkers! Six-cup size—and it retails for only $7.95.

• • •

• • •

The G-E Circle—a program of special interest to women—is on the air every weekday (except Saturday) 5:45 P.M. Eastern Standard Time.

SPECIAL OFFER! Use this iron in your own home. See how easy it is to iron with—and you can see why it is easy to sell. Mail the coupon.

Section E-3910, General Electric Co.
Merchandise Dept., Bridgeport, Conn.

Please send me direct, a sample Feather Weight Iron for my own use, at the special price of $2.95, postpaid.

☐ Remittance enlosed ☐ Send C. O. D.

*Name*_____

*Street*_____

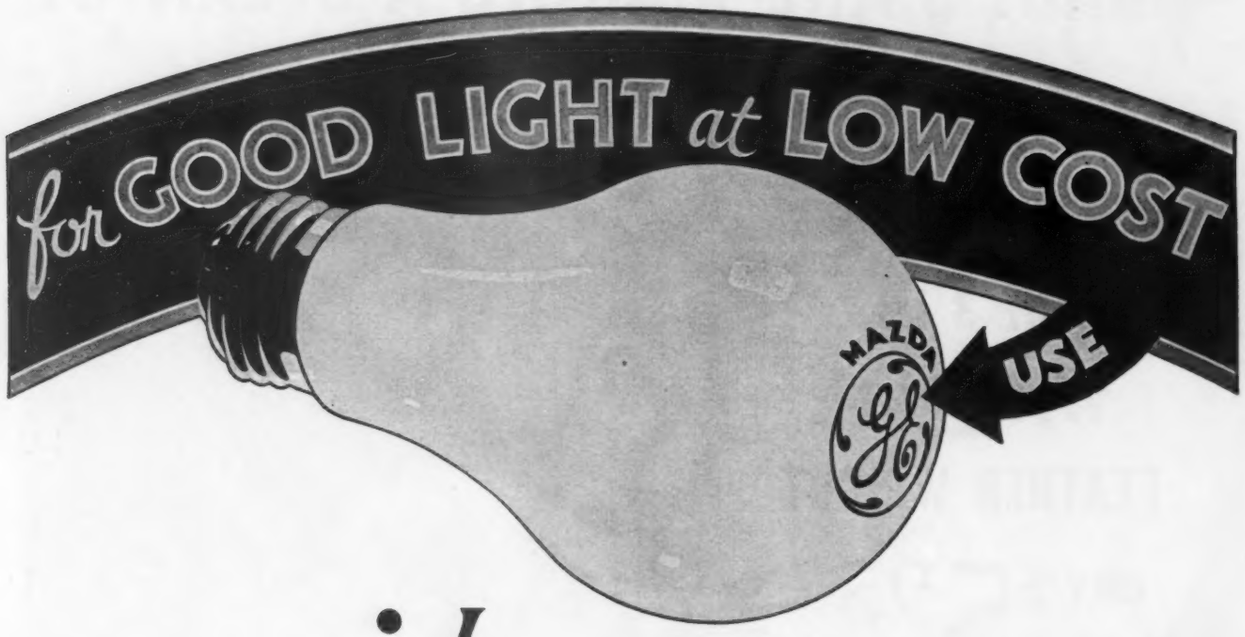
*City*_____ *State*_____

My General Electric Hotpoint Distributor is:

*Name*_____

*Address*_____

● WHEN YOU RECEIVE THIS POWERFUL WINDOW BANNER, LITHOGRAPHED IN FULL COLOR, SIZE 18″ x 36″ WITH A SMALLER POSTER WHICH SAYS "BUY 'EM HERE" . . . BE SURE AND PUT IT ON YOUR WINDOW



• *Line up with this drive*

TO MAKE THE METERS CLICK

THE lighting load is the constant load. Homes were first wired for light and lighting is still the basic load builder. Some homes can get along without other electrical conveniences—but every home must have light. Daily load records of Central Stations show that the sale of residential lighting is still the greatest revenue producer.

It is the easiest load to build.

Everybody has lighting sockets. Many are empty. People have put off buying lamps as they have put off buying everything else. But they must have light. So the job is to fill the empty sockets. Every socket filled means more current through the meter.

The Edison MAZDA lamp activity for fall will help you fill the empty sockets. It dovetails with the biggest advertising campaign in twenty consecutive years of Edison MAZDA lamp advertising which will blanket the country this fall to focus people's attention on their need for high quality lamps made by General Electric.

Every advertisement in October will carry a reproduction of the window banner pictured above. Thus readers will be urged to buy their lamps where they see this window banner displayed.

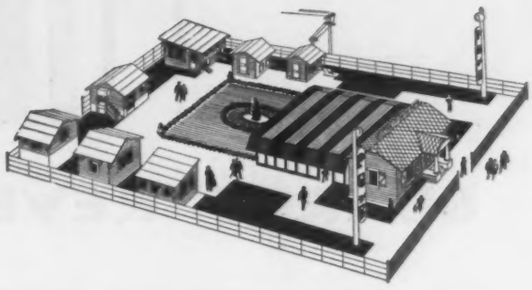
If you haven't received this window banner, write for it and a copy of the broadside "Have you any more good ideas." It is filled with sound suggestions for filling empty sockets. General Electric Company, Nela Park, Cleveland, Ohio.

EDISON MAZDA LAMPS

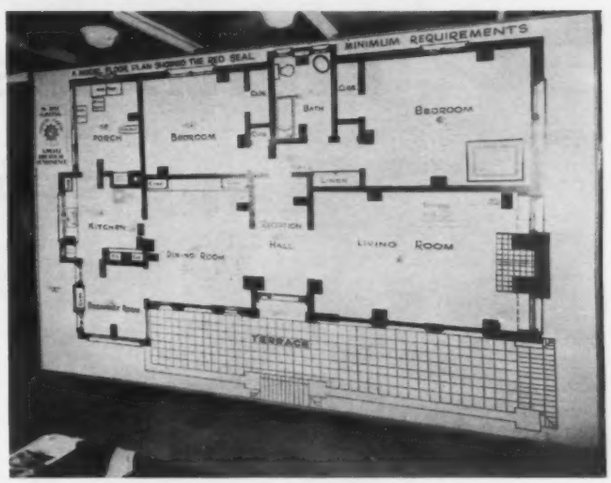
GENERAL ELECTRIC

At the State Fair
38,060 FARMERS
Learned the Story of *"Electricity on the Farm"*

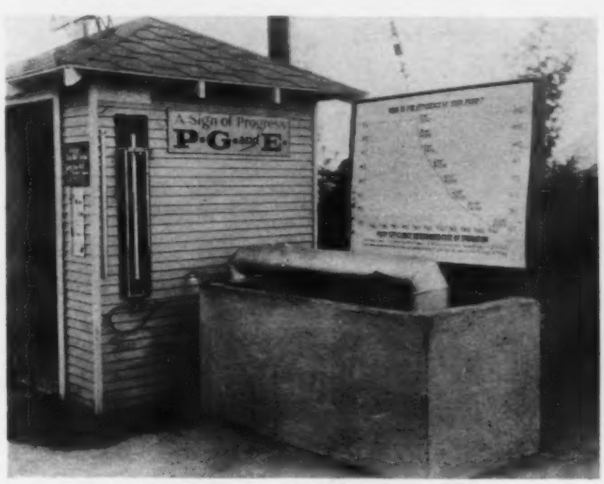
More than 38,000 farmers visited the P. G. and E. model electric farm at the State Fair. Of interest to dealers in rural districts is the fact that scores of these farmers became genuine prospects for the sale of electrical appliances and equipment.



In this State Fair exhibit there was something to attract the attention of every member of each visiting family. Women found much interest in the domestic appliances, which included electric ranges, ironers, dish washers, food mixing machines, washing machines, refrigerators, and many others.



Much interest was also taken in the huge board which demonstrates the value and convenience of Red Seal Wiring. The soil heating exhibit attracted wide attention. At the pump house, hundreds of farmers and orchardists studied the chart which proves that the cost of irrigation is affected more by pump efficiency than by any other factor.



Thousands of dairymen again visited the P. G. and E. exhibit of milking machines, sterilizers, refrigerators, coolers, separators, and aerators in the milk house and dairy barn. Poultrymen, too, were impressed by the complete display of modern electric brooders with their ultra-violet lamp equipment, as well as the electrically lighted chicken house.

Now is the time to capitalize on the prospects created at the State Fair by this permanent exhibit, "Electricity on the Farm".

EW-110-1032

P · G · and E ·

PACIFIC GAS AND ELECTRIC COMPANY

OWNED · OPERATED · MANAGED BY CALIFORNIANS

For YOUR REHABILITATION PROGRAM a New

GUARDS REVENUE

LOWERS COSTS

FACILITATES OPERATION

ENDS SERVICE CALLS TO RENEW FUSES

AT the most opportune moment comes this latest outstanding announcement from Westinghouse, of a new metering system that enables you to obtain greater returns from your rehabilitation program. This new system, made up of the new OC Detachable Meter, the Nofuze Load Center, and the new Portable Stroboscopic Tester, offers a solution for practically all the disadvantages of the old metering methods.

Briefly, its chief advantages are:

1 It assures regularity of income, and saves meter readers' time. The outdoor meter gives every reading at first call without entering the customer's home.

2 The OC Detachable Meter is the most economical form of outdoor metering, requiring no meter box.

3 With a completely metal-clad outdoor meter installation, in full view of the public, the possibility of energy diversion is eliminated.

4 Permanently installed testing facilities are not necessary—a portable test jack can be used for all types of detachable meters.

SEND FOR BOOKLET

Westinghouse Electric & Manufacturing Company
Room 2-N—East Pittsburgh, Pa.

Gentlemen: Please send me Circular 1960, "A New Metering System."

Name .....

Company .....

Address .....

City ..... *State* ..... EW 9-17-32

Westinghouse

T 79370

Quality workmanship guarantees every Westinghouse product

Metering System

5 Because of the new meter sequence, without fuse protection the test jack provides "dead-front" testing, giving full protection to the meter tester, meter, and transformer.

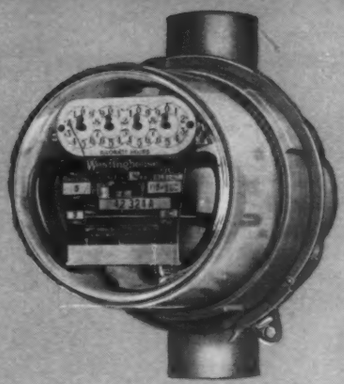
6 With the Portable Stroboscopic Tester, meter testing and adjustment, in the field, become as simple as setting a timepiece. No cut and try methods are required.

7 Used in conjunction with the Nofuze Load Center, the outdoor Detachable Meter makes possible a wiring job adequate for future needs at lower cost.

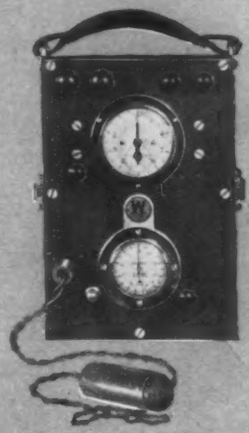
8 The Nofuze Load Center eliminates the cost of service calls resulting from blown fuses. Small circuit breakers, or Flipons, guard each circuit and, when a dangerous overload occurs, open instantly to protect the wiring. When the overload has passed the customer can restore service himself, quickly and easily by a mere flip of the switch handle.

Consider what the advantages of this system mean to you in lower metering costs, guaranteed income, and elimination of service call expense. The improved accuracy of the OC Meter alone warrants the retirement of old types.

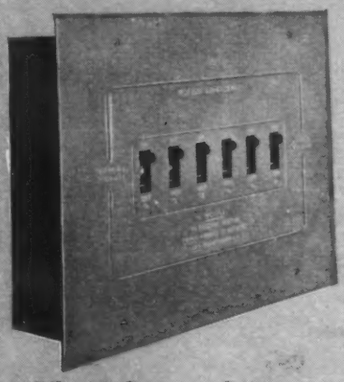
Send the coupon for Circular 1960, which gives a complete description of the system and its advantages. It will help you get greater returns from your rehabilitation dollars.



The new OC Detachable Watthour Meter



The New Portable Stroboscopic Tester



The Nofuze Load Center

Another Seven League Step

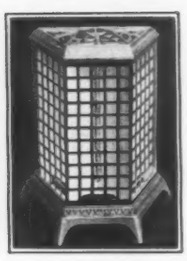
We Announce The Consolidation

WITHOUT CHANGE OF MANAGEMENT OF

THE HOFFMAN SPECIALTY CO.
OF CALIFORNIA
manufacturers of
THERMADOR ELECTRIC
AIR HEATERS

with

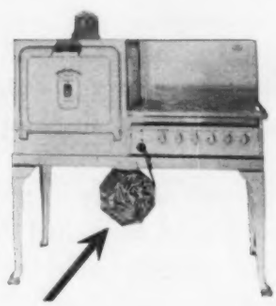
EVERHOT ELECTRIC & MFG. CO.
manufacturers of
EVERHOT ELECTRIC
WATER HEATERS



Two New Products

Portable
Spread-Ray
$9.95

Kitchen Heatfan
Type KHF
$18.50



Thermador Electrical Manufacturing Co.
116 Llewellyn Street, Los Angeles, Calif.
Capitol 3065

SUCCESSORS TO

HOFFMAN SPECIALTY CO. OF CALIF.

EVERHOT ELECTRIC & MFG. CO.

Thermador

ELECTRICAL WEST

With which is consolidated the Journal of Electricity
McGraw-Hill Company of California

San Francisco, Oct. 1, 1932
Volume 69
Number 4

G. C. TENNEY, *Editor*

Industry Interdependence in Load-Building

ONE basic remedy for changing the slope of the business indicators of the electrical industry from descending to ascending is stated succinctly in this issue by the chief executive of one of the largest utility companies in the country. He says, ". . . future prosperity depends upon the attitude that each branch of the industry displays toward utility load-building. Without new load, there can be no new plants, lines or substations. Without increased use of electricity, rate reductions become problematical. Unless new load is developed, the market for wiring and supplies will be restricted. Without utility promotional activities, volume of appliance sales will lag. Thus, every electrical manufacturer, irrespective of his product, every wholesaler, every contractor and every retailer has a definite self-interest in the extension and success of utility load-building."

This is a simple remedy—one that hardly requires proof. But for those doubters and obstructionists in the industry, proof is offered. Take, for instance, that large group of manufacturers and distributors who build and sell the sinews that make up the power companies' systems—the poles, wire, switches, transformers, meters and generators. Are they interested in promoting utility load-building? If they are not today, then by tomorrow they would show wisdom in making that interest concrete. Here is the reason: Average figures for several California power companies indicate that one kilowatt of domestic load requires an investment of $51 in system facilities to serve it—$31 in the distribution system, $10 in substations and transmission facilities, and $10 in generating equipment. The National Electrical Manufacturers Association has estimated that each new electric range sold and installed means an actual market for apparatus and equipment of

Editorial

$117. Enough new ranges or any kind of new load and additional system facilities will be required. That means business for the manufacturers and distributors.

Does the contractor care about load-building? Whether he admits it or not, he has a most selfish interest. Using the electric range as an example again, each new installation means a wiring job ranging from $35 to $50. An average agricultural pumping installation involves a wiring job varying between $100 and $125. Three California power companies last year added to their lines 7,500 kw. in industrial heating load. For installing this equipment, electrical contractors received $37,500. Yes, the contractor is vitally interested in the extension and success of utility load-building.

The retailer who says, "to hell with the power companies; get 'em out of merchandising," is shooting at the goose that lays the golden eggs. Without the initial utility pioneering, what would be the consumer acceptance of some of the appliances the retailer now sells in quantities? The retailer overlooks a very definite relationship between the appliance he is trying to merchandise and the electricity the power companies would sell. Without electrical energy to operate it, the appliance is a useless lot of metal and wire—so much junk. But without the appliance to utilize it, the power company's kilowatt-hour does not even exist. Experience demonstrates that the more kilowatt-hours sold, the lower the possible selling price. Low rates should mean an extended appliance market. Utility promotional activities create quicker consumer acceptance, a more susceptible public. And there are instances where utilities have stopped load-building and retailers' sales

have slumped. Certainly the retailer has a definite self-interest in utility load-building.

What affects any of the above branches of the industry will affect the wholesaler similarly. Good business for them means good business for him. He, too, has a selfish interest in promoting utility load-building.

Finally, there are the employees of the power companies themselves. Sales departments know the necessity for load-building. When load-building is translated into terms of hours of work, operating and construction departments soon appreciate its importance. One company estimates that a new electric range installation provides 35 man-hours of work for a construction crew. Another company's analysis of a range sale shows that 35 employees benefit and that $485 actually is spent for labor and equipment. When broadcast to the rank and file of employees, the information stepped up the number of prospects submitted by 250 per cent.

Disorganized, the electrical industry today will make a sorry showing in the business recovery. Organized, and with a full appreciation of the interdependence of its various branches, it will make rapid progress. Manufacturers with plants operating on a fractional-time basis desire to sell wire, poles, apparatus and equipment. Journeymen want work and contractors want jobs. Retailers and wholesalers want increased volume of profitable sales. The public would like lower electric rates. The power companies wish to recapture loads lost due to the general economic situation and to build new loads.

The remedy lies in the showing the industry makes in the marketplace. There is no substitute for electricity. Let the united industry demonstrate its salesmanship.

Be Prepared for Business Recovery

BUSINESS is coming back. All along the line, important indicators lend support and confirmation to the improvement in mental attitude and increasing confidence developed during recent weeks. To the best of its ability, the government has provided the fundamental machinery.

Yes, business is coming back. That means that the electrical business will revive. But speed of recovery depends upon business itself. If the electrical industry waits for improvement in other lines, its participation in the upturn will be delayed. If, on the other hand, it does its share in making business generally better, it will be among the leaders of the recovery movement.

Let those in the industry whose morale is low, whose confidence has been weakened or whose faith in the future has been shakened, read and heed the optimistic statements of the leaders of the industry as set forth on pages 134-137 of this issue. Here is concrete expression of the type of leadership that will guide the electrical industry in the Far West back to normal.

THIS is the eleventh annual load-building issue of ELECTRICAL WEST. Each year, in the October number, the editors assemble fact, opinion and experience on this vital phase of the industry. As pointed out elsewhere in these columns, results from load-building will have a salutary effect upon the recovery of every branch of the industry. The editors dedicate this issue to the success of the load-building job which is ahead.

The Dealers' Way Out

ADVERTISING certainly has proved this: That the intrinsic value of an article is not so important as the salesmanship applied to it. And salesmanship is both personal and impersonal.

With consumer advertising trimmed to a minimum, the only consumer salesmanship existing in quantity lies in the tongues of the dealers, the contact between manufacturer and consumer. In these times, this contact should be protected and guarded; but even platonic business friendship has been too close for some manufacturers.

Sales managers everywhere know that financial worry is synonymous with poor salesmanship. Time after time articles by sales managers have cited cases of good salesmen wrecked by financial troubles; almost without exception, the same moral is pointed out: When the financial knot is untied (and the company usually provides the process because it is good business to do so) the salesman comes back strong.

Surely, if this be true of salesmen, who sell the manufacturer's goods to the dealers, it is true of the dealers, who sell the same goods to the consumer.

Dealers everywhere are going broke. Some are responsible for their failures; others are the victims of competitive forces livened by the depression. Department stores offer better bargains than

the small dealer can afford to offer; markets are reduced and margins are inadequate; new distribution policies circumvent the dealer on best sellers. Under this pernicious procedure, the small town dealer is becoming a relic, or a miracle.

The dealer's one salvation is a method by which he may compete with the larger (but less numerous) outlets in price. If they offer terms, he must be able to duplicate the terms. If they charge a low rate of interest, his rate must be no higher.

In succeeding pages of this issue is a suggested plan by which this dealer help may be given. Every manufacturer and dealer should study it; perhaps it is the revolutionary idea which every economist says is needed for the perfection of an adequate distribution system.

Field for Standardization Is Not Exhausted

RECOMMENDATION of the N.E.L.A. Meter Committee that all classes of house- or service-type, self-contained, alternating current watt-hour meters be manufactured in three standard capacities, namely, 5, 15 and 50 amperes, offers one more proof of the possibilities for simplified practice throughout the industry. With the continued growth and increasing complexity of power systems, the types, ratings and designs of apparatus and equipment have placed an undue burden on manufacturers, store keeping organizations and service departments. Simplification, if only of ratings, sizes, and connections, would go far toward reducing costs to the manufacturer, utility and customer.

Improvement in the design of watt-hour meters during the past decade is a splendid example of cooperation between the manufacturer and the operating companies toward achieving this simplification. Suggested improvements and clear explanations by the utilities of problems incident to the operation of this piece of equipment have formed the basis for research and development by the manufacturer until, at the present time, single-phase meters can boast of acceptable accuracy curves out to 300 per cent of rated load. This characteristic makes possible the substitution of three ratings for the six ratings now considered necessary to cover the range of single-phase loads.

Similar procedure can be applied to many other lines of electrical equipment which are manufactured on a production basis. The physical size of distribution transformers, types and ratings of cutouts, fuse ratings, relay mountings, and instrument connections, are but a few of the items which could be standardized or simplified to the benefit of the entire industry. In the industrial field, a start has been made by standardizing the mountings of induction motors, a step of immeasurable benefit to manufacturers of machine tool apparatus and to manufacturing plants subject to frequent re-arrangement of equipment.

These efforts towards simplification and standardization indicate a keen appreciation of the benefits to both manufacturer and user. Further expansion of this program will depend upon the initiative displayed by the industry through its various organizations and associations.

AMONG the want ads in a recent newspaper was this refreshingly frank admission of fallibility: "Electrical shop, fixtures and equipment—I'm a flop in the electrical business; have you some property that's giving you the jitters? Let's trade." Back-to-the-land movement has reached the electrical business.

Facts Prove Economies of Highway Lighting

FACTS, not generalities, are the strongest argument that a salesman can present. In these times of careful purchasing, these facts must carry the added weight of definite economic advantages accruing from the thing or service purchased before the sale can be closed. In the case of highway lighting, such economic advantages have been uncovered in a study recently completed by lighting engineers.

Analysis of fatal and non-fatal accidents on a section of the Bay Shore highway in San Francisco, before and after the installation of three miles of high-intensity lighting, reveals a real saving in property and an inestimable saving in human life. For nine months prior to the installation of the lighting equipment, there were 81 accidents, of which 54 occurred at night. For the same nine months in the period following the lighting of the highway, there were 67 accidents, of which only 32 occurred at night. Based on a ratio of daytime to nighttime accidents, and assuming the same number of daytime accidents in either case, the improvement is 54 per cent in favor of the lighted highway.

Highway lighting is necessary. High speed, congested traffic and a mounting accident toll demand it. More studies such as the one mentioned will hasten the day when it arrives.

The Industry

Looks at the Future

The Looking Glass of an Industry Is the Eyes of Its Leaders; a Glance Through These Pages, Containing the Varied Thoughts of the West's Standard-bearers, Will Bring Optimism to Anyone—Optimism Because the Industry Recognizes Its Responsibilities and Because Such an Attitude Is the Handmaid of Progress

Too Much Self-Admiration

By GEO. A. CAMPBELL

President, Sierra Pacific Power Co., Reno.

THE electric utility industry has suffered from too much self-admiration. It has been too prone to pat itself on the back and say, "Just see what we have done." As a matter of fact, its record is replete with mistakes, old fogyism and lack of vision. It is not difficult to attain success in an industry which has grown so rapidly and so consistently that, even in a territory standing still, yearly consumption increases from 5 to 7 per cent, regardless of lack of effort.

Nearly fifteen years ago, good and adequate domestic refrigerators were available. It took us over ten years to learn that they constituted a desirable load. Electric ranges, in all essential features as desirable as is last week's model, were available nearly twenty years ago. But we spent years and years fussing over the matter of diversity factor and other technicalities. Now we are in the midst of campaigns popularizing the electric range.

The industry has little to be proud of, unless it be that we might have done worse.

The depression, which we all believe is receding, might well cause us to pause, take stock, cut out the "bull" and really make an earnest effort to justify our own extravagant opinion of ourselves and, above all, reform and do something more nearly appropriate to the times and our responsibilities. Thus far, our history is nothing to be proud of, especially in view of the opportunities which confronted us.

Industry Interdependence

By FRED B. LEWIS

Vice-President and General Manager, Southern California Edison Company Ltd.

AS THE electrical industry emerges into the sunlight, after the storms of three discomfiting years, and faces the future with a renewed measure of confidence, it seems to me that there are one or two fundamentals that require clearing up before prosperity can be assured. Both have to do with industry interdependence..

Does the electrical industry believe sufficiently in the theory of cooperation to practice it? If it does, then the time to make that cooperation practical and workable most assuredly has arrived. If utilities, manufacturers, wholesalers, retailers and contractors sincerely believe that, by working as a unified group, they can achieve greater prosperity than by working competitively as individuals, then we may expect progress. In the last analysis, every branch of the industry, and every individual concern in it, serves one common customer—the public. We have one common objective also—to secure an increasing volume of business from this common customer, with a reasonable profit for all. For cooperation to succeed, the industry must not lose sight of this inter-relationship, nor must it forget that benefits accrue in proportion to the individual effort expended.

The other phase of industry interdependence that will influence future prosperity depends upon the attitude that each branch of the industry displays toward utility load-building. Without new load, there can be no new plants, lines or substations. Without increased load, rate reductions become problematical. Unless new load is developed, the market for wiring and supplies is restricted. Without utility promotional activities, volume of appliance sales will lag. Thus every electrical manufacturer, irrespective of his product, every wholesaler, every contractor and every retailer has a definite self-interest in the extension and success of utility load-building.

Full appreciation of these aspects of industry interdependence will strengthen the electrical industry's position in the coming economic recovery.

GEO. A. CAMPBELL

. . . cut out the "bull."

FRED B. LEWIS

. . . one common objective.

A Platform for the Future

By R. E. FISHER

President, Pacific Coast Electrical Association; Vice-President in Charge of Public Relations and Sales, Pacific Gas and Electric Co.

IF ONE were to set up a platform for the new business department of the public utility companies of tomorrow, based upon the experience of the past and the trends of today, I believe that it should contain the following planks:

1. The function of the new business department is three-fold in character. It encompasses the creation of business for the company through new consumers, new uses of electricity, and new and increased use by existing consumers.
2. Its program is based upon load building, not merchandising. The sale of current-consuming merchandise is only a means to this end.
3. The right to sell merchandise for purposes of load building should never be relinquished, for to burn that fundamental creative bridge behind it, the company would forever set a brake, a limit upon its growth.
4. Major stress should be placed upon creative activities, as opposed to narrow competitive activities which injure those whose cooperation in creative selling always is desired.
5. Existing facilities should be loaded to their full capacity to serve, as only in this manner will the fullest economy be realized, both for company and consumer.
6. Determination should be reached as to which are the most profitable types of load, and the sales program should concentrate upon them. These loads should be measured upon the basis of the expense of selling per dollar of revenue obtained.
7. More complete analysis of the market should be made to the end that less waste in effort and expenditure will result and

greater benefits accrue from the new business efforts of the entire trade.

8. The utility must pioneer the development and the acceptance of worthy new applications.

9. It must see that the consuming public gets the greatest value for the dollar spent.

10. It must maintain more intimate contact with the dealers in the territory served and, by friendly contact and mutual confidence, receive from them reports as to their sales results and their sales problems.

11. Recognition of the legitimate dealers in the business is essential. The company therefore must maintain a merchandising policy that will be on an ethical, constructive basis, above the criticism of legitimate dealers, with respect to selling prices, finance charges, length of terms, trade-in allowances and premiums.

12. A constant educational campaign for all utility employees must be carried on to enlist their support in the accomplishment of sales objectives and the maintenance of public relations.

13. More contact with consumers is imperative, realizing that in this way only can satisfaction be given and new uses for electricity brought to acceptance.

14. Sales personnel must be selected carefully. In most cases those who have technical background probably will be found to be the best suited to the selling of a commodity so dependent for proper satisfaction upon a knowledge of its technical capabilities and applications.

15. Advertising, as printed salesmanship, should always be directed by the new business department so that it may best be coordinated with the selling activities under way or contemplated.

16. In the broadest sense, selling the products of the company involves selling the company, which is a public relations function. In this way sales and public relations are inseparable. With this relationship in mind constantly, there can be no room for the use of high pressure methods which would gain sales at the expense of goodwill.

R. E. FISHER

. . . selling the product involves selling the company.

The Benefits of Worry

By M. L. HIBBARD

Vice-President and General Manager, Idaho Power Co.

AS DAVID HARUM is supposed to have said: "A certain amount of fleas is good for any dog." The electric light and power industry without doubt has had its full share of trouble since 1929, and, if this philosophy be true, it will in due course have benefited thereby and have become better able to carry the burdens of more normal times.

For the past three years, to an ever-increasing degree, our industry has found it necessary to organize its efforts in order to retain as much as possible of its commercial and industrial business and to offset, to some extent at least, the falling off in earnings due to decreased activities in those lines. It has been necessary for us to develop from mere order-takers to salesmen. As a result, the members of our organizations, through the experience they have thus gained, will be better prepared to function in the future than ever before.

Part of our losses in business has been brought about by conditions which will not continue for long, now that we are apparently on the up-grade. Those who have suffered from destructive competition or who have resorted to such in the fight for their very existence, will return to normal methods at the earliest opportunity. This will have its effect in improving our business and making it possible for us to regain the revenue we have lost.

M. L. HIBBARD

. . . who can say [the industry] will not be greatly benefited?

Here in the West, we of the electrical industry have done much pioneering that is now proving of benefit to our industry throughout the nation. We have a progressive citizenry on the farms, as well as in the cities, who are not content with anything but the most modern methods; which means, of course, that these methods must be electrical. We have low rates of charge for our service, designed to further increase its use, and, with such increased use, to further reduce rates. In all of these we have a wonderful advantage if we will but make use of the opportunity and actively promote the use of the electric range, the water heater and the refrigerator in the home. Air conditioning is with us and offers a tremendous field for added use of our product.

During the period which opinion generally seems to feel has now been ended, we have been tried by fire, but who can say that, for the long pull, those who have survived will not be greatly benefited thereby?

A. F. HOCKENBEAMER

Fill out depleted stocks, then advertise the fact.

Recovery Depends Upon Business

By A. F. HOCKENBEAMER

President, Pacific Gas and Electric Co.

JUST before leaving for President Hoover's recent economic conference, I went into the San Francisco store where I have been buying shoes for several years. The kind I wear were out of stock, but they assured me they could get a pair from the factory in two or three weeks. Since I was going to stop in Chicago, they were sure I could get what I wanted at one of the two stores there. But the Chicago store also was out of stock. At this store they were positive I could buy my new shoes at one of their several stores in New York. However, even the New York stores would have had to get from the factory the pair I wanted.

Isn't this a situation with which we are all familiar and which exists today among the many stores supplying the public? And why wouldn't it be good merchandising sense for the leading merchants in every community to take advantage of returning public confidence by filling out their depleted stocks and then advertising the fact that they could fill all orders? Whoever does it first in his line will be a leader in the recovery.

Fortunately, the electrical industry is prepared for all demands. We have surplus stocks of everything. Our kilowatt-hours are just as good, just as full of work as they ever were. And they are cheaper by 17 per cent than they were in 1913. Our rate of participation in the general business recovery will depend upon the ingenuity and effort we put into our selling.

Fundamentally, the government has taken all possible steps to assure recovery. Financially, the country is sound. The speed of recovery depends upon business itself. Confidence and hope were expressed at the Washington economic conference. I look for real results from the programs outlined there, particularly the job-sharing plan which is meeting with such success here in California and which is to be applied nationally.

Insofar as northern California is concerned, there is much to arouse confidence. It appears as if both bridges across San Francisco Bay will be built. Estimates for the San Francisco-Oakland bridge indicate that, among many things, 217,000 tons of steel, 1,000,000 bbl. of cement, 1,000,000 cu. yd. of aggregate and 40,000,000 ft. of lumber will be required. Employment will be given directly and indirectly to 6,000 men. All of that means business for everyone, including the electrical industry.

Plus Signs Appear

By CLARE N. STANNARD

Vice-President and General Manager, Public Service Company of Colorado

IN THE Rocky Mountain region, the depression has passed. Of that we feel certain. But by no means do we mean that the trouble is all over. Recovery is certain, but time will be required to repair the injuries incurred. Reasons assigned for our belief in the turn of the tide for better things are:

1. People are tired of the depression and worn out with its demoralizing influence. That means that the fear-frozen attitude is passing away.
2. They have quit bragging about their poverty. We have passed the stage of condemning ourselves and conditions for our plight and have started to build our lives again on a sane and solid footing.
3. The exercise of human ingenuity in earning a livelihood again is apparent. In Colorado, literally thousands of men have gone to the streams to pan gold. That it has been effective is reflected in the fact that gold shipments in Colorado are up 10 per cent and in the Rocky Mountain region they are up 20 per cent.
4. Farmers in Colorado are harvesting a generous crop. Perhaps the acreage is not quite so great; perhaps the yield is not so abundant; but the profitable feature over an ordinary year is that the proceeds from marketing will be net to the farmer. In other words, this year's crop was not produced on borrowed money. The farmer has done the work largely with his own hands and the help of his family.
5. The number of unemployed becomes smaller instead of greater. Houses are filling up and there are reported to be fewer vacancies than there have been for the past two years.
6. The power and light business has ceased its shrinkage of kilowatt-hour consumption. While there is no particular upturn, we are certain that increased activity in our business will follow. I firmly believe that the upturn, long overdue, has arrived and that the years immediately ahead are to be filled generously with activity and prosperity.

Opportunity Ahead

By A. EMORY WISHON

President, San Joaquin Light and Power Corp.

ECONOMISTS long have advised American business and industry to be ready for our nation's emergence from the depression. Many signs along the horizon indicate that the bottom of the depression has been reached and that the climb toward recovery has begun. Eventually we shall be back upon a basis of satisfactory stability; we may even, if history repeats itself, progress on to greater prosperity than ever before.

In this new era we now believe to be dawning lies opportunity for the electrical industry. Our first great task is to recover the lost load of the years of adversity, in which we have suffered in far greater measure than generally is comprehended. Much of that lost load will come back to us in the natural course of events. Factories will reopen, commercial enterprises will resume or extend their operations, homes long dark will once again blaze with electric light. But, while our first concern is to recover the business we have lost, our responsibility by no means ends there. Merely to wait for the business to come back is to stand still at a time that calls for action.

We want the old load, but we want the new load as well. It can be had. This West of ours will continue to grow. The vast resources of the section are in almost the infancy of their development. There will be new factories, new commercial enterprises, new homes, all needing electrical service. There will be new uses for electricity and new appliances to sell, which will help to build the load.

Our thought, therefore, should be directed not so much toward the old business which will come back to us, as toward the new business which is to be created chiefly by our own effort. That effort should be unflagging with all the mental and physical best we can give to it. We have been tireless, unafraid, unfaltering in our pursuit of business during the period of depression; with zeal as great and with even higher inspiration, we should greet the change to better times.

CLARE N. STANNARD

. . . trouble isn't over.

A. EMORY WISHON

. . . we want the new load.

F. T. GRIFFITH

Coordination with the dealers.

P. M. DOWNING

never in the history of the industry . . .

Build Confidence

By FRANKLIN T. GRIFFITH

President, Portland General Electric Co.

ANY attempt at forecasting a definite time when business in the Pacific Northwest will again be on solid ground and making strides toward assured recovery must still be regarded as in the realm of uncertainty. Tangible evidence of orders in volume in any of the major lines is not yet apparent. The fairly optimistic predictions by industrial leaders in the East do indicate that there has been a change for the better in some sections of the country, but, as past experiences indicate that it takes several months for such reactions to reach us here on the coast, it is hardly to be expected that this region will be favored with an immediate recovery.

However, there is in evidence a noticeable gain in optimism and the belief that soon business here will be definitely on the upgrade toward substantial recovery.

Just now attention should be given to the further up-building of confidence that better times are at hand. Utility companies can assist constructively by endeavoring to create interest among residence customers in an increased use of current-consuming devices already well known and tried, such as the electric range, the electric refrigerator and electric water heater, and in new applications such as air conditioning, which during the period of depression has been perfected to a degree warranting the utilities in bringing it to the attention of the electrical consumer.

Any such endeavor on the part of the utilities should, however, be carried on in such a way as to coordinate with the activities of dealers handling such appliances.

Back-to-the-Home Movement

By P. M. DOWNING

Chairman, National Sales Section, N.E.L.A.; Vice-President and General Manager, Pacific Gas and Electric Co.

ECONOMISTS say that the world is undergoing a series of unseen revolutionary changes. In times like these, people forget a lot of things they thought they knew and change many of their habits of living. Herein lies opportunity—opportunity for leadership such as has never before confronted the electrical industry.

We know that electricity will do countless things better and cheaper than any other service; that it will bring comfort and convenience, relieve drudgery, banish darkness, provide entertainment; that nothing equals it for ease of control or variety of application. Given a product to sell with as many strong sales arguments in its favor as present-day electric service, a good salesman would alter the downward trend of any sales curve. The immediate job of the good salesmen in the electrical industry is to re-

capture loads lost in the last three years and to make substantial inroads in the vast undeveloped markets for electricity.

There is no better starting point than the domestic field. The domestic load is still the backlog of the industry, despite two years of looking at the home as practically the only source of new revenue. The American home is a going concern. There are no padlocks and no "Vacant" signs on its doors. Instead, there is a decided back-to-the-home movement. In the face of modern developments, the industry can no longer say that twenty-one million homes are lighted. These homes have a degree of illumination that is woefully inadequate. Omitting the flatiron, even the most popular of modern electrical appliances are not used in half of the homes.

Never in the history of the industry has the challenge to commercial men been greater. I am confident that they will measure up to the responsibilities and opportunities of these changing times.

A New Era Approaches

By A. B. WEST
President, The Southern Sierras Power Co.

THE electrical industry is facing the approach of a new era in production; experiences of the past indicate that it will be the better part of wisdom to be prepared for it. With an improvement in commodity prices and a general restoration of confidence, one is impressed with at least two fundamental factors that are important in preparing the foundations for a steady acceleration of industrial activity that will come when confidence is restored and the upturn commences. These are:

First—For three years all lines of business have curtailed maintenance and replacement expenditures to an irreducible minimum. Few people realize the vast volume of work that normally is required to keep our plants and equipment in the United States operating, and the pent-up demand that three years of drastic curtailment of this character of work is creating.

Second—During the last three years the genius of our people has brought about the invention and perfection of a multitude of new and improved machines and appliances, which, when once introduced, will tend to render obsolete much of our existing equipment and plants and will force the junking and replacement of them.

It is not safe to attempt to predict with any certainty just when the upturn is going to come. However, there are indications at this time of an improved public psychology, better control of the credit situation, and higher commodity prices, which certainly are working toward it.

People Are Beginning to Buy

By WM. F. RABER
President, San Diego Consolidated Gas & Electric Corp.

STATEMENTS of optimism unsubstantiated by fact act unfavorably on the maker if not proved by future development. Representatives of the electrical industry, heretofore, have been reluctant to publicly analyze past business conditions because of their disappointing character. Imaginative prediction no longer is necessary. I sincerely believe that our industry is already on the back trail to normal times.

The influence of the stock exchange is widespread, even among those of average income who have never seen the inside of a brokerage establishment. Apparently the market is now more stable than in many months past. The fact is beginning to reflect itself in the spending habits of the public. In many channels of business the recent rally of stocks has been responsible for a noticeable increase in trade. People are beginning to buy other than the absolute necessities of life.

Our own industry will be among those to benefit from this new atmosphere of buying. We are in an excellent position to meet this return to so-called normalcy. Our generating plants and distribution systems are ample for very substantial increases in demand. Those of us who have maintained our commercial departments intact are prepared for immediate aggressive action and will reap a reward proportionate to the effort expended.

A. B. WEST

It is not safe to predict.

WM. F. RABER

We are in an excellent position . . .

GUY W. TALBOT

. . . people are beginning to buy.

J. B. WILSON

. . . product without a real substitute.

Forget the Past

By GUY W. TALBOT
President, Northwestern Electric Co., Pacific Power & Light Co.

I HAVE just returned from Washington, D. C., where I attended President Hoover's economic conference. This conference was attended largely by the outstanding business men of the country. During the entire meeting there was not a single note of pessimism and, on the contrary, there was a spirit of optimism prevalent. The impressions I got were:

That there is no further danger of a financial crisis, the situation having been more or less cured;

That the credit situation is now in good shape;

That the forced liquidation of securities is over;

That it is up to the business interests, along with the individual citizens, to use the instrumentalities which now exist to bring back a sustained upward trend.

The business interests throughout the country, with their central committee in Washington, will undertake to help speed the recovery. The practice of hoarding is disappearing rapidly and people are beginning to buy. The utilities in general have a surplus of unused generating, transmission and distribution facilities and power can be supplied at a moment's notice.

I believe that our industry should begin to forget the past and utilize every effort to interest people in the use of power through the sale of load-building devices.

For the Cautious Buyer

By J. B. WILSON
President, Coast Counties Gas & Electric Co.

"IN THE last few years," a prominent manufacturer said last month, "the dollar spender wanted, and still wants, to know what, why and how, how long, how much and how good. His money is not passed over on the strength of happy phrases. And let us be glad of that!"

Let the electrical industry especially be glad of that. For electricity is not sold with happy phrases; to every question the now-thrifty buyer asks, the electrical industry can answer better than any other.

We sell a product which is the best for its many uses because it is cheaper, safer, cleaner and surer. The service of the electrical industry probably is better, on the whole, than that of any other industry. The falling off in gross output has come, not from the substitution of some better product, but because that task for which electricity was used is being done no longer.

With a product without a real substitute, with a service enjoying popular acceptance, we should be in a much more favorable position today than we are. We have only ourselves to blame.

George Graffis demonstrates how every salesman who had just closed a sale rang the bell, both figuratively and literally, upon returning to the office. Everyone in the Stockton office knew by that gong when more work-hours had been generated for company crews

P.G. and E.

Company Refuses to Let Depression Get It Down, So Again Tops Its Range and Water Heater Bogey in Annual Drive

EVERY era has its saga, its story of daring in the face of insurmountable obstacles. When the sagas of 1932 are sung, they will tell stories of how commercial enterprises refused to let the depression whip them; how they stood firm facing the stream of downward quotas, retreating efforts and curtailed sales forces; and how, in spite of the pressure of example all about them, they made a gain nevertheless. If, as it has been called, the past year or two has been an "economic war" waged on all fronts, then the croix de guerre must be pinned over the commercial heart of the Pacific Gas and Electric Co. It did not quit in the face of fire.

Because it did not quit, it took advantage of any laxity on the part of its competitors. The wisdom of the policy is shown in the record of the first six months of the year: 2,003 ranges and 1,092 water heaters sold, a total of 3,095 units, or 46 more than were sold in the same period last year.

If the world war had its Verdun, this company had its annual range and water heater sales campaign this spring and summer. Vice-president and General Manager P. M. Downing himself led the drive, giving not only his name but his personal attention and stimulus to the campaign. In the last hours, just before the official close of the campaign on July 30, he was on the phone, urging the division managers to a final effort, watching the returns which came to San Francisco headquarters, counting each unit reported sold and supervising the entire operation of the drive.

R. E. Fisher, vice-president in charge of public relations and sales, was field marshal; Hugh Crawford, general sales manager, and Harry Carroll, electric sales manager, and E. F. Perkins, appliance sales manager, constituted the general staff. Just how important this last minute impetus given the campaign by Mr. Downing was may be realized from the fact that, within ten days of the end of the campaign, 569 units had to be sold to make the quota. When the final tabulations were in, the number sold exceeded its quota by 82 units, making a total of 651 ranges or water heaters sold in the last ten days.

When Mr. Downing saw how the campaign bearing his name was faring, he called in his division managers. They were given a clear-cut order to swing every man, woman and office boy into action. At the close of the campaign, a dinner was held for salesmen and salesmanagers who had made 100 per cent of their division quotas. Of the 39 salesmen, 31 were at the dinner; all but 4 of the sales managers were present.

The quota for the P. M. Downing range campaign was 1,700 ranges and 800 water heaters. There were sold 1,622 ranges and 960 water heaters, a total of 2,582 units against a quota of 2,500 units, or 103.3 per cent. Possibly the best showing was made in the Drum division: 160 sales were made in 90 days, or 266.7 per cent of its quota. This meant an average of over 2 sales per day for the 75 working days of the campaign. These results were attained, too, in a thinly-settled area in the Sierra.

Dealer sales in the campaign counted as well as did company sales and the dealers made as fine a showing as the company. The dealer sales on ranges totaled 836 of the 1,622, or more than half. On water heaters, however, as was to be expected, the company sales were greater in proportion than those of the dealers. Dealers sold 356, the company 604.

One of the features of the campaign was a wiring allowance of $20 where the range sold replaced competitive fuel. Of the entire quota sold only 32 units were sold replacing company gas. A trade-in allowance of $7 was allowed by the company on ranges, $5 on water heaters. If the salesman allowed more it had to come from his own commission. Approximately 500 of the sales involved a trade-in allowance.

How Stockton Created Crew Work

One of the most valuable ideas in the entire campaign was developed in the San Joaquin division of the company. When this idea first came (simultaneously, it seemed) to H. B. Heryford, division manager; Ward Schafer, division sales manager; and Bob Evans, division superintendent, work had not yet acquired the esteem it now holds. Simply stated, this idea was to translate the sales quota into hours of work which each sale generates for a company crew. Although charts and blackboards were made up for the operation of this idea as long as a year ago, it was not until April that the plan was actually put into effect.

At the beginning of 1932, the employees of the entire system had been told the story of the company's need

Rings the Bell

Translation of Quota Into Crew-Hours of Work Boosts One Division Over the Top and Stimulates Entire Company

to have them participate in the company's selling plan if employment was to be maintained and activity upheld. A bonus system had been in force for two years or more, and this year the bonus had been increased to $3 for each sale resulting from a prospect tip turned in by the employee, whether sold by the company or a dealer.

But even this bonus idea brought only a limited amount of response. Usually it was only a few, the same few, who made use of the idea. As yet the significance of prospect tips as the forerunners of work on the payroll for company crews had not become apparent. Just about March, the first curtailment of crew working days, from the 6-day to the 5½-day week, was necessary. The 6-day week was soon restored, but the effect of that curtailment of working time made every employee keenly aware of the personal value of work. This coincidence brought out of storage the crew-work boards, and they were mounted in each warehouse or yard of all of the division's 10 offices.

"Keep the crew working in 1932" was spread across its top. "These employees are helping YOU. How about you helping THEM." Below were provided spaces for listing the names of each employee, the number of crew-hours generated by means of his tip, either to a gas or an electric crew, and a column for the bonus earned. Lower on the board was a space for the district totals, and at the very bottom of the board a listing of the number of crew hours estimated to result from each class of sale. To quote:

"Every gas or electric appliance sale means WORK for ALL OF US. A CLOSED pink slip from you will give THIS MUCH WORK to a CREW:

Electric	Hrs.	Gas	Hrs.	Gas	Hrs.
Range	7	Range	3	Floor furnace	4
Water heater	5	Water heater	6	Control furnace	5
Air heaters	4	Circulator	3	Conversion burner	6

Keep Everybody Working!"

Next to the board usually was located a tray full of the "pink slip" prospect booklets, leaflets containing information about the appliances, and broadsides.

The values were expressed in crew-hours rather than man-hours because it was felt that there would be a better group reaction to such a method, that a team spirit would be aroused and that rivalry would develop in the working crews to see who could develop the most work. This proved to be the case.

"I turned in 7 hours of work for you fellows," it was common to hear a man say to other workmen. "How about you passing in 7 hours of work for me."

Before long the entire employee personnel of the division was acting toward sales as would a sales crew. They were watching the boards every day, trying to turn in more work than their fellows, and becoming so sold on the idea that the division, which last year lagged in the range campaign, more than topped its quota.

One man, after turning in several pink slips and watching results, finally turned one in on himself, and had a salesman come out and sell his wife a range. He wanted to be sure that he would get credit among his own crew members for 7 hours more work. This fact, more than the bonus paid him for the tip, influenced him. It was true of most employees that the crew-work idea meant more to them than the bonus personally acquired. Consequently, many who had previously paid no attention to the bonus idea became active in this drive for business in order to insure work for themselves and their fellows.

In two months, prospects turned in increased 250

In every yard and office, a large blackboard carrying the names of all employees was mounted. A record of the amount of work created by each employee by means of prospect tips which resulted in sales, made everybody want to participate

per cent over previous records. Of the prospects turned in, an unusually high percentage resulted in sales, something over 25 per cent. Even the public became interested. Naturally, among their acquaintances and friends, the idea spread and, already sympathetic to any move which makes for employment, friends gave their support to the plan.

In the inauguration of the idea, the crew-hour schedule was estimated as carefully as possible from actual experience. All of the time required to set the range, run the pole line, service wires, set the meter, and generally service a range, was considered. A crew averages 5 men, so that a range sold results in work, it was pointed out to employees, for 35 hours, or 7 hours for a crew. The added time necessary in other services resulting from the sale were not counted in. If the time of clerks, auditors, salesmen, executives and others were estimated, the figures would be even more impressive.

To start the plan, Ward Schafer, sales manager, and Bob Evans, superintendent, held a series of 7 meetings, one in each district office of the division and two in Stockton. To these meetings all employees were brought in. Mr. Schafer told the sales story and Mr. Evans told the story in terms of work for those present.

The plan is being continued throughout the year with other featured campaigns beside the range. It is planned to hold meetings of all employees periodically to keep the enthusiasm alive. Since the plan went into effect in this division many other divisions of the P.G. and E. likewise are using it. A new quota has been set by headquarters—"one kilowatt of connected load, or its equivalent in gas, per employee, per month." This crew-work plan will be fitted into that idea and carried on for the remainder of the year.

Some of the effects of the "Keep Everybody Working" idea may be appreciated from the following figures: From April 1 to July 9, the duration of the range campaign, there were 660 pink slips for gas appliances turned in, resulting in 120 sales. There were 250 pink slips for electric prospects turned in, resulting in 50 sales. A total of 910 slips were turned in, from which 170 sales were made, or 18 per cent. A total of 1,272 pieces of equipment were sold. The number of employees submitting slips was 206, or 34 per cent of the total employed in the division.

The range and water heater quota for the division had been set at 330 units. The division sold 367 units, many of which could be attributed to the work creating plan.

Toward the end of the campaign, a large bell, similar to those used on shipboard, was set up at the division headquarters at Stockton. Whenever a salesman came in to report a sale the gong was clanged loudly. This brought the division manager, the sales manager, the superintendent and others out to congratulate the salesman. During the last days of the drive the gong rang many times, ringing in more work to employees, more business for the company, more wiring for the contractors.

▼ ▼ ▼

Even Snow in June Can't Stop Them

It was a Hard Summer, From a Refrigeration Standpoint, But Distributors, Dealers and Utilities Overcame Cold Weather With "Hot" Sales Campaigns

OLD MAN Weather was unfaithful to California this year. Instead of a summer of the collar-wilting heat which forms in the public's mind a mirage of winter snow and ice cold refrigerators, it was, on the whole, a summer of pretty cool days.

Such weather didn't occasion any prophesies of world calamity, but it did keep the usual throngs away from refrigerator sales rooms, prompting calamitous prophe-

Buy Your Electric Refrigerator during This Big Event!
It's RISKY To Keep Foods Above 50°
Reduce Your Refrigeration and Food Costs With An Electric Refrigerator
Electric refrigeration is not a luxury. It is not even an expense. It is really an economy . . and when you consider its lower operating costs and the food savings it permits . . you will see that electric refrigeration actually "pays for itself."
50 DEGREES IS
50°
THE DANGER LINE
Foods Kept Below 50° Are SAFE
1st Annual ELECTRIC REFRIGERATOR Event
NOW . . . Greater Values Than Ever Before
The First Annual Electric Refrigerator Event offers you the greatest opportunity of the year Today, electric refrigerators cost less than ever before. You always have wanted modern refrigeration. Now is the time to have it. You will never get more value for less money than now
See our complete line. We have a model and size to fit your needs and the low monthly terms make it easy to pay as you save
DEALER'S NAME
BRAND OF REFRIGERATOR
ADDRESS
PHONE

Billboards all over Los Angeles carried the same message shown below and dealers distributed the dodger shown at the left; that's how Los Angeles sold refrigerators. Note the appeals used in the campaign; price is not among them

sies about sales quotas. Problem: How to get more prospects.

Southern California

In Los Angeles, the problem was solved by advertising the First Annual Refrigeration Event, a campaign which ran throughout the month of July. It was the first big effort of the newly-formed Refrigeration Bureau of Southern California, under the leadership of President George Belsey and Secretary R. G. Kenyon, but that effort proved such a success that the bureau probably will sponsor a similar campaign next year, and for years following. At present, the bureau is loosely knit; the effect of the cooperative work undoubtedly will be the closer welding of the group into a strong, single-minded unit.

Twenty-one distributors and five utilities* comprise the refrigeration bureau. When they decided to announce the campaign, a great mass meeting was held in Los Angeles; more than 700 dealers and their salesmen attended. Full details of the advertising program and of the general sales plan were unfolded at the meeting, and a spirit engendered which was carried through to the close of the drive.

Adopting as its slogan, "An Electric Refrigerator Pays For Itself," the bureau blanketed the area with outdoor advertising; into every bill mailed by the utilities went a stuffer telling the story of the necessity for adequate refrigeration in the home. In this manner, 850,000 direct-mail pieces were distributed.

Advertising of distributors and dealers in the four metropolitan and 55 community newspapers was supplemented by a city campaign by the Bureau of Power and Light and an extensive hinterland campaign by the Edison company. One of these advertisements carried a grand selling punch—a statement by the Los Angeles County health officer that it was necessary to "Keep your refrigerator below 50 degrees cold at all times." The statement is trite, by now, but the effectiveness lay in its declaration by the unbiased guardian of the people's health.

Every dealer in the territory was provided with a standard window trim set, free of charge. This consisted of a replica of the billboard poster, together with a set of seven brightly-colored pennants, each carrying the slogan and a short sales message.

To tie in the dealer, a small dodger, upon which the dealer's name and address were printed, was offered at a very low price; these were distributed from house to house in neighborhoods.

With the exception of the utility advertising, all the expense of the drive was borne by the 21 distributors, through the refrigeration bureau.

Northern California

Sales were satisfactory in the northern California territory of Pacific Gas and Electric Co., a total of 15,276 units having been sold in the first half of the year. Yet, even though the figures were better than those of last year, the Northern California Refrigeration Bureau decided that there still was room for improvement. Last year, during the state fair at Sacramento, the bureau and P. G. and E. staged a refrigerator school and exhibit. The results were fine; so, working on the theory that the same medicine would promote a similar effect, the two organizations repeated. They were right.

Little was changed in the procedure from that followed last year. (EWEST, Dec. 1, 1931, p. 273). There

*Southern California Edison Co. Ltd., Los Angeles Bureau of Power & Light, Los Angeles Gas and Electric Corp., Pasadena and Glendale municipal systems.

Public Service Co. of Colorado saw crowds swarming into department store basements, so J. M. Eakins, superintendent of the electric refrigeration department, decided to open a bargain refrigerator basement to dispose of repossessed and outdated boxes. In two months, 150 such units were sold; two or three are sold nearly every day. Mr. Eakins is demonstrating a bargain unit, but the customer is camera minded

were ten exhibits, one each for Frigidaire, General Electric, Westinghouse, Majestic, Kelvinator, Norge, Mayflower, Servel and Leonard units, and one for a P.G. and E. display of water heaters and ranges.

Some 17,000 persons are estimated to have passsed through the exhibit tent, including 7,000 who attended the eight classes of the refrigeration school. On the stage during the classes were ranges, refrigerators and air conditioners, the makes being varied so as to give each unit a display equal to that given other units. Representative dishes were prepared on the range, if necessary, or were prepared directly by the demonstrator and placed in a refrigerator. Particular attention was given to dishes prepared from left-overs, so as to stress the economy of refrigerated dishes and to illustrate the ease with which excellent dishes may be prepared on short notice.

During the middle of each class, tickets were distributed and prizes awarded. These consisted of groceries, soft drinks and small electrical appliances; the winners had to collect the prizes from different booths. Frozen cubes of beverages were again given away at the booths to get more people to visit them.

Working in shifts, 65 salesmen were present in the nine exhibits to demonstrate and sell; eleven units were sold from the floor and hundreds of prospects secured. From this list, 500 names of "live" prospects, able and ready to buy, have been culled, so that plenty of work is in store for a few weeks. Names of prospects who were "just looking" or "not ready to buy" have been filed for future reference.

This 4-day exhibit cost $1,100 to the bureau members, exclusive of advertising in papers up and down the San Joaquin valley, from which the fair draws its visitors; advertising was done under the imprint of the P.G. and E. and the handling of the show was the work of John Wrenn, refrigeration specialist of the power company, assisted by John Hodgkins, of the power company's Sacramento office.

Financing the Small Dealer

Something must be done—whatever is done should be done quickly. Many dealers face this situation: They must either have help in financing or pass out of the picture. The industry needs these dealers. The utilities at small risk and expense can give them the needed help.—L. E. MOFFATT, in Electrical Merchandising, July, 1932.

MR. MOFFATT is right—the utilities can give the dealers the needed financing help. But so can the government; so can the banks. The real question is not: CAN the utilities help?, but: SHOULD the utilities help? And that embraces two more questions: Is it the utilities' place to help? Will the dealers accept such assistance from the utilities?

In so far as the West is concerned, the answer to all of those questions is: No!

Dealers already have refused financing assistance proffered by commercial departments. Finance companies set up by individual utilities for the sole purposes of accepting term paper on appliances have offered dealers the identical terms the utilities receive, and the dealers have rejected the offer.

The reason is clear. Any support directly or indirectly coming from a power company seems paternalistic; dealers believe that any such offer carries unseen strings which will bind them to the power company merchandising policy and fetter their individualism. Merchandising freedom and competitive liberty demand the avoidance of entangling alliances.

Again, it is scarcely the utilities' place to give this help. Granted that a utility profits by keeping its dealers solvent and selling, that it profits if its dealers are able to finance their sales—and electrical appliances cannot be sold today without financing. Yet, strictly speaking, power company commercial departments are maintained for the new load added to the lines, for the additional electricity that the companies thus sell. If the appliance sold is well-made, safe and tested, it makes no difference who manufactures or sells it. Logically, it is the manufacturer's job to see that his product is sold, that it is as easy to sell as any other—and by any outlet.

Manufacturers have accepted too little responsibility for the ultimate sale of their goods. The result has been overproduction. This actually was the story of the 1920's.

"But we have learned a lesson and we'll guard against that in the future," argue the manufacturers. On the contrary, we learn from history that we learn nothing from history. If the manufacturers were closer to the final sale, if it were their responsibility to see that the right amount of the right goods were sold in the right way, there would be no disastrous forcing of the market. The automobile industry still is suffering from the pains incident to the learning of this lesson.

The Manufacturer's Task

The manufacturer alone should have the task of seeing that his company increases its profits by increasing its sales; the responsibility for this belongs to no one else. And if increasing sales involves assistance to distributors and dealers in financing their sales, the manufacturer alone should supply that assistance.

All this would be useless were the manufacturers unable to render aid; such is not the case. We present here a skeletonized, rough plan, conceived by a former factory salesman who saw his small dealers failing because of their inability to meet the terms offered by large furniture and department stores. It appears consistent and workable, and is offered for the comments, favorable and unfavorable, which it may receive. Although it applies to any item of merchandise, with suitable adjustment of prices and discounts, it is unfolded in terms of washing machines for the purposes of clarity.

First, let's review past conditions: A few years ago the average selling price of washing machines was approximately $165; this average washer cost the dealer $99. A customer bought this washer for $15 down and the balance in, say, 12 months. At this

No. 1 $ 250.00

San Francisco, California, Oct. 1, 1932

On August 1, 19 32, for value received, the undersigned, a corporation, promises to pay to the order of

at its Head Office in San Francisco, California, the sum of

Two Hundred and Fifty ---------- Dollars,

in Gold Coin of the United States of America of the present standard of weight, fineness and value, with interest thereon in like Gold Coin at the rate of 6 per centum per annum from the date hereof until paid, said interest payable monthly, and if not paid as it becomes due, interest on overdue interest shall thereafter be paid at the same rate. In case said interest or any part thereof is not paid when due, the whole of the unpaid principal and all unpaid interest thereon shall immediately or at any time during such default become and be due and payable, at the election of the holder hereof, of which election notice is hereby waived. In case of suit to enforce the payment of this note or of any sum payable hereunder, the undersigned agrees to pay such additional sum as may be reasonable for counsel fees.

IN WITNESS WHEREOF the said corporation has caused this note to be executed under its corporate name and seal by its President and Secretary, thereunto duly authorized by resolution of its Board of Directors.

Washing Machine Manufacturer

By John J. Doe Secretary

By James A. Smith President

N 33A-(3-32)-1M-3-31-(379)

This (6%)

time, finance companies were charging 8 per cent per year on time contracts, so the dealer added this charge to the $150 still due, making a total of $162 to be amortized over a year. The dealer then turned the contract over to his finance company, who deducted the $12 interest charges, plus 10 per cent of the contract, or $16.20, as a reserve. (This latter amount was returnable to the dealer upon the fulfillment of the contract.) The finance company thus deducted $28.20, paying the dealer $133.80 for the contract.

But consider what took place. The finance company actually was loaning the dealer $34.80 more on the washing machine than the dealer had paid for it. For numerous reasons, this plan proved unsound and caused severe financial losses to many finance companies, jobbers and dealers. Naturally, the finance companies looked for a plan more workable and profitable.

In the meantime, the average selling price of washing machines had dropped to about $70. Also during this time, the department, furniture and large hardware stores had become outstanding factors in the sale of washers and were charging 6 per cent per year on unpaid balances.

How did this affect the small dealer? He now is paying $42 for a machine and selling it for $70, realizing a gross profit of only $28. He sells the machine for $10 down, the balance payable in not more than eight monthly payments. Finance companies now charge a minimum of $8.96 to finance a contract of less than $100 for eight months; on the $60 balance of the washer contract, this amounts to more than 22 per cent per year. The dealer has two choices: He may ask the purchaser to pay this interest charge (and probably be laughed at) or he may meet the competition from the large stores which carry their own paper. To do this the latter (and to get business he must do it) he must absorb the difference between the 22 per cent he has to pay and the 6 per cent charged by large stores. So, out of the 40 per cent margin allowed him, the dealer must absorb 16 per cent. If he has a salesman, he pays about 15 per cent commission on the sale, so that his net profit is approximately 9 per cent. No dealer's overhead is less than this net 9 per cent, so that business must be done at a loss.

No dealer can long exist without profits; no distributor can survive unless his dealers make enough profitable sales to stay in business; no manufacturer can last without distributors and dealers.

The Plan

The dealer himself cannot borrow from the bank for obvious reasons. Few dealers are financially able to carry their own paper. But THE MANUFACTURER IS ABLE TO BORROW FROM THE BANK, securing his note with his products. If he cannot, it probably is a sign that something is wrong with the manufacturer and that he may not last long in the washing machine field. In that case, it is to the best interests of the distributor and dealer that a more secure product be handled.

Manufacturing costs in this field were said to be on a 4 to 1 ratio, the retail price being four times the actual manufacturing cost. Under present conditions, the ratio probably is around 3 to 1.

Assume that a washer costs $25 to make; the distributor pays about $33.50 for it, the dealer pays $42 and the consumer $70. The real worth of the washer is only $25; the added $45 covers the various handling and selling costs and profits.

Say that a manufacturer has 10 washers made and ready for market. He can borrow $250 from the bank on

ORIGINAL—NEGOTIABLE
Use indelible pencil or ink
Statement on Reverse Side
Must Be Filled In By Seller
Send to

SALES CONTRACT

Date October 1, 1932

To Any Dealer (Dealer) Town and State San Francisco, Calif.

MODEL NO. OR NAME	SERIAL NO.	DESCRIPTION OF ARTICLE	MANUFACTURED BY
X	J-1947-S	washing Machine	washing Machine Manufacturer

The undersigned Seller hereby agrees to sell, and the undersigned Purchaser hereby agrees to purchase, subject to the terms and conditions hereof, the above described article (s), complete with attachments and equipment, delivery and acceptance of which, together with an executed copy of this agreement, are hereby acknowledged by the Purchaser.

The Purchaser has this day paid to the Seller ——— Dollars ($ 10.00)

and the Purchaser agrees to pay the Seller or order, one instalment of $ 8.62 on the first day of the month following the date hereof, and 7 instalments of $ 8.62 each on the same day of each month thereafter, with interest after maturity at the highest legal rate, together with any collection expenses incurred by the Seller or his assigns. It is agreed that the title to said article (s) is to remain in the Seller or his assigns until all amounts due hereunder are paid in cash and then thereupon title is to pass to the Purchaser.

Time is of the essence of this agreement and if the Seller or his assigns deem himself or themselves insecure for any reason, or if the Purchaser fails to make any of said monthly payments, as above specified, at the option of the Seller or his assigns, all remaining instalments may be declared immediately due and payable, and in the event the Purchaser fails to liquidate the remaining instalments the Purchaser agrees on demand to return the said article (s) to the Seller or his assigns and the Seller or his assigns may without notice of demand and without legal process enter into the premises and take possession of said article (s) and make such disposition thereof as may be deemed desirable and all payments made shall be retained as liquidated damages for the use of said article (s), or said article (s) may be sold with or without notice at public or private sale and the proceeds thereof, less expenses, credited upon the amount unpaid and in either event, as liquidated damages for the breach of this contract. In case of deficiency, the undersigned agrees to pay the Seller or his assigns, said deficiency, and does hereby confess judgment in the amount of such deficiency. The Purchaser further agrees to take good care of said article (s) and to be responsible for its loss by fire, theft, or other casualty and not to remove said article (s) from the address of the Purchaser as indicated below unless written consent is first obtained from the Seller or his assigns.

It is understood and agreed that all rights and remedies hereunder are cumulative and not alternative.
Said article (s) shall remain personal property and not become a part of the realty.
All rights of exemption and homestead laws are hereby waived by the Purchaser.
The undersigned hereby certifies that the statements on the reverse side of this contract are true.
Any part of this agreement contrary to the laws of any State shall not invalidate other parts of this agreement in that State.

IT IS UNDERSTOOD AND AGREED THAT NO OTHER AGREEMENT, GUARANTY OR WARRANTY, VERBAL OR WRITTEN, EXPRESSED OR IMPLIED, SHALL LIMIT OR QUALIFY THE TERMS OF THIS CONTRACT.

Accepted October 1, (Date) 1932 Signed A. Consumer (Purchaser) (Seal)

Any Dealer (Dealer) Address 801 Green St., S.F.

Richard Roe (By Individual, Partner or Officer) Signed and delivered in the presence of Henry D. Jones (Salesman)

No. 557

or this (22%)

these machines, because that is the amount represented in their fabrication. That is the maximum amount the bank feels it can be certain to realize from the sale of the 10 washers if they must be taken back in default of the note. On such a borrowed amount, the interest charge will not be more than 7 per cent; 6 per cent probably is more correct.

These same washers are sold to a distributor for $335, on terms of 20 per cent down and the balance over ten months at the same rate of interest. The distributor has paid $67 in cash, which amounts to the purchase of two washers outright and the buying of eight more on the installment plan, covered by a lease contract.

These same washers are sold to a dealer for $420 on the same terms of 20 per cent ($84) down and the balance over ten months at 6 per cent. The dealer, because he is paying only 6 per cent, need charge only that rate on the balance of the consumer sale contract; thus he can compete with the larger stores. He is not absorbing a 16 per cent loss in the financing of his paper.

Costs and Amortization—10 Washing Machines
6 Per Cent Interest

	Manufacturer	Distributor	Dealer
Total cash cost	$250	$335	$420
Cash paid (down payment)	0	67	84
Amount amortized	250	268	336
Gross margin	85	85	280
Interest collected in 10 months	13.40	16.80	28.00*
Interest paid, 10 months	12.80	13.40	16.80
Added interest (profit)	0.90	3.40	11.20*

*Based on 20 per cent down. Dealer will show a profit on interest in any case; if down payment is large enough, dealer can retire loan in less than 10 months, thus diminishing interest paid; this also holds for distributor and manufacturer.

Examining the accompanying table, we find that this has taken place: The manufacturer has received from the bank the amount he has paid for the fabrication of the washers. Thus he is able immediately to pay for the materials and labor involved. In addition, he has received from the distributor $67 of his $85 gross margin, so that he merely is waiting ten months to collect the additional $18. Moreover, he has borrowed only $250

from the bank and has loaned the distributor $268 (in goods), so that at the end of ten months he has gained 90c. in extra interest, over and above what he pays to the bank.

The distributor has advanced $67 in cash, but he collects $84 from the dealer, so that he has a cash margin of $17 at the outset. Also he has loaned the dealer more than he has borrowed from the manufacturer, and gets $3.40 in added interest over and above what he pays the manufacturer. He is waiting ten months to collect $68, the difference between his gross margin and the cash balance from the sale.

Similarly, the dealer gains (if he uses the same terms he receives) $11.20 in added interest. He has completed the chain which has amortized the full retail price ($700) of the machines; everyone has benefited by the amortization, even the bank.

Fundamentally, the whole plan is indirectly bank-financed, but the manufacturer borrows the money because the dealer is unable to do so. The consumer (or the dealer) pays to the bank, through the distributor and manufacturer, a low rate of interest—about one-fourth of that now being charged.

Everyone Benefits

From the manufacturer's standpoint, the plan provides a method of moving large quantities of merchandise economically and without forcing the market. The distributor and dealer now can take ten washers when, under a cash basis, only two could be taken. It offers the manufacturer a firmer and more definite hold on his distributors and dealers. It offers him an indirect regulation of the washer from the time it leaves his factory until it is fully paid for by the consumer—a regulation which many manufacturers have wanted but have been unable to acquire by other means.

The distributor is financially able to keep a better and more complete stock on his floor. He also is afforded a firmer hold on his dealers. He also can move larger quantities, with attendant increased profit.

But, most of all, the small dealer is benefited. He is able to meet competition and still make a profit. By being financially able to place ten washers on his floor, he is able to sell more. And he will sell more because there will be profit in his selling. He will be able to sell better because he will not be losing money with each sale. And selling more washers, he will grow into the profitable dealership which is the basis of the success of every distributor and manufacturer.

Whereas collections now are made directly by the finance company, the dealer losing the effect of the continued return of the customer to the store and the added opportunity of selling still other appliances (this, incidentally, is one of the best advantages of installment selling), under the new plan the dealer makes his own collections and retains these now-lost advantages.

There are too many ramifications to allow a full coverage here; they can be explained and worked out as the need arises. But most important now: Mr. Manufacturer, Mr. Distributor and Mr. Dealer, what do you think of this plan?

▼ ▼ ▼

Carry Washer Sales Right to the Home

Dealer in Rural and Small Town Territory Sets Forth Principles and Methods That Bring Him 50 Sales Each Month

John C. Busch, left, and his hard working, night and day calling, washer salesmen of Oregon City, Ore.: Dave Thomas, Frank H. Busch and Elmer Leek

EVEN in a city of only 6,000 population, and with a rural territory embracing not more than 120,000 additional, a washing machine business can be successful, with hard application to some simple, direct principles of selling. This the Busch Washer Co., Oregon City, Ore., finds to be true, as it consistently sells from 50 to 60 electric washing machines every month, a process that has been going on for the past five years. Although Oregon City is only 15 miles from Portland, the territory covered by the company does not include that large city, but only parts of Marion, Washington and Clackamas counties and Clark County, Wash., where a branch is maintained at Vancouver.

To achieve such consistent results, it is evident that the battle must be carried to the customer through intensive selling methods. Very little of the business walks into the store; in fact, not more than 10 per cent of it. Intensive methods, however, are anything but high pressure, strong arm methods, as characterized by some of the manufacturer sales crews.

But the method does call for persistent and thorough canvassing of practically every home in the territory. This is done on the basis of a friendship and acquaintance built up through many years as an established local organization in which the people of the community have confidence.

John C. Busch is manager as well as salesman. Besides himself, he has four salesmen: Frank Busch, Dave Thomas, Elmer Leek and J. Trail. B. J. Carroll is manager and salesman in the Vancouver office.

Each salesman is provided with a light truck, furnished and maintained by the company. Two washers are loaded on the truck at the beginning of the day's work; a general conference is held to discuss the routes and call-backs for the day; then they are off and, for the most part, are not seen again until closing time or even until the next morning.

The salesmen work on a straight commission without drawing account. Aside from a common understanding as to individual prospects and a friendly cooperative basis of working, each man is practically in business

Essentials of a Good Washer Trade

John Busch sums up the ten most essential principles of good business in the sale of washers—and, for that matter, of other appliances too—in these statements:

1. Do not pass up anything. An unpainted house may possess a good interior.
2. Keep at it early and late. The theory of percentage holds just as good in the washing machine business as it does in life insurance or selling books.
3. One sale leads to another in almost every case. Whenever you sell a machine, never fail to get a line on every friend and relative of the customer. Some of them also may be in the market.
4. The local dealer cannot be too arbitrary with the customer in matters of policy. In the long run, he will be ahead by pursuing a policy that is fairly flexible as regards credits, payments, etc. In other words, aim to be fair and human in your dealings and try to meet the customer half way.
5. Carry your own paper for time payment sales if it is possible to do so. This represents a saving to you that will become a very definite addition to your profits. At the present margins, it is quite essential that you do this.
6. In any display of machines in your place of business, get them as near to the passersby as possible. Have at least one machine out on the sidewalk.
7. Watch the birth records. Methodically follow up all households where there is a new baby.
8. Keep a complete stock of parts for the machines. Allow a year free service, including parts. After that, make a nominal charge for servicing.
9. Advertise in your local papers as much as you can afford to. Whatever space you carry, let it be regular, according to a definite schedule.
10. The easiest sales come from people where you have a close "neighborhood" acquaintance. Cultivate a large one.

for himself. Knowing the business, having a wide personal acquaintance and a good line of washers to sell, his compensation is in direct proportion to the work he puts in.

At the office, no attempt is made to keep a mailing list of all prospective buyers. A tickler file is used for prospects for which a definite lead has been secured. Similarly, the routing of salesmen from day to day is not done on a definite schedule calling for complete coverage at stated intervals. Knowing the territory and most of the people in it as intimately as they do, the salesmen instinctively can make for the section where business is ripest. If a new line of machines is taken on or some major feature is brought out on the line already handled, an attempt may be made to see every family as soon as possible, but, otherwise, the salesman's daily routing takes him where business most likely is to be found.

Two trucks loaded with washers, ready for daily contact with customers and neighbors of customers. Neighbors often become buyers, too

Long hours and sometimes calls on Saturday afternoon or Sunday are necessary to reach husbands of prospects that want the machine. When the day's work is of an introductory nature, the salesmen may make as many as 20 to 30 calls per day, but calls per day mean little in this work, because several hours or half a day may be spent in a single stop. If the prospect is a live one, the salesman stays on until the sale is closed. In farm districts, from which about half of the sales are derived, the calls may take the salesman out into the field as well as into the home.

No direct-mail advertising is used; newspapers are employed exclusively. There are two in Oregon City. Advertisements, varying from 1x3 in. to 4x6 in., run regularly once a week, with an occasional full page.

By strenuous effort, the Busch company was able to keep 1931 sales up to the 1930 level. So far in 1932, helped by a new line, indications are that the company will sell a greater number of machines than during last year, although perhaps the dollar volume will be somewhat less because of lower prices.

One thing that Mr. Busch has noticed in this connection is that trade-ins seem to be falling off. In fact, they are not considered a problem at present. This is due, no doubt, to the lower prices prevailing and to the realization by customers that the one-time generous allowances are a thing of the past.

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No Protected Prospects For These Salesmen

PROSPECTS remain in that embryo state for only 24 hours, reasons R. B. Condon, president of Ben Franklin Electric Co., Seattle, and if he or she isn't sold in that time, he or she isn't a sizzling prospect. For that reason, salesmen for this, the largest Haag washer dealership in the United States, have no more protected prospects.

"If it is a case of 'money coming in on the first,' this can be smoothed out easily," says Mr. Condon. "No other reason for not buying immediately is legitimate. If one salesman cannot close a sale within the time span, other salesmen should have a try. The first salesman should not be put off with flimsy excuses."

This plan must work, judging from the record of the company. Moreover, the company itself finds the prospects by newspaper advertising which brings telephone inquiries and visitors to the downtown display rooms.

Campaign for Load and New Business

With High Speed Range Units

By F. D. Luse
Michelas Equipment Co., Portland

IN INTRODUCING and sponsoring an intensive campaign to modernize the electric ranges of the Northwest by installing Chromalox high speed cooking units, four utilities, cooperating with the Michelas Equipment Co., Northwest representatives of the Edwin L. Wiegand Co., intend to achieve three results: Aside from the necessity of maintaining sales volume under current conditions, the drive aims at increased load for the utilities and increased popularity for electric cooking.

Although this step had been considered for some time, it was evident that the editorial message in the June issue of ELECTRICAL WEST, dealing with the urgent need for modernizing electric ranges to create and maintain customer satisfaction with electric cooking, had aroused further interest and stimulated action. This lack of public favor is due largely to the fact that older ranges, over a period of years, have lost an appreciable portion of their none-too-high original efficiency. At the same time, exposed brick of the open-type coil has become discolored and burnouts are more frequent than necessary due to oxidation and spill-overs. Also, competitors of electric cooking have capitalized the slight difference in cooking speeds, a factor which has been aggravated recently by the introduction of natural gas.

In the Chromalox superspeed range unit, the companies felt that they had a potent weapon with which to combat competition and increase the satisfaction of those who already use electric cooking. Full cooperation of the various utility sales departments for the modernization campaign was obtained after the unit had been submitted to the respective power company laboratories for test. Companies included in the original plans are the Pacific Power & Light Co., The West Coast Power Co., California Public Service Co., and Western States Utilities. Other utilities have the plan under consideration; several not yet in the campaign are using high speed units for servicing and combating complaints of slow cooking speeds.

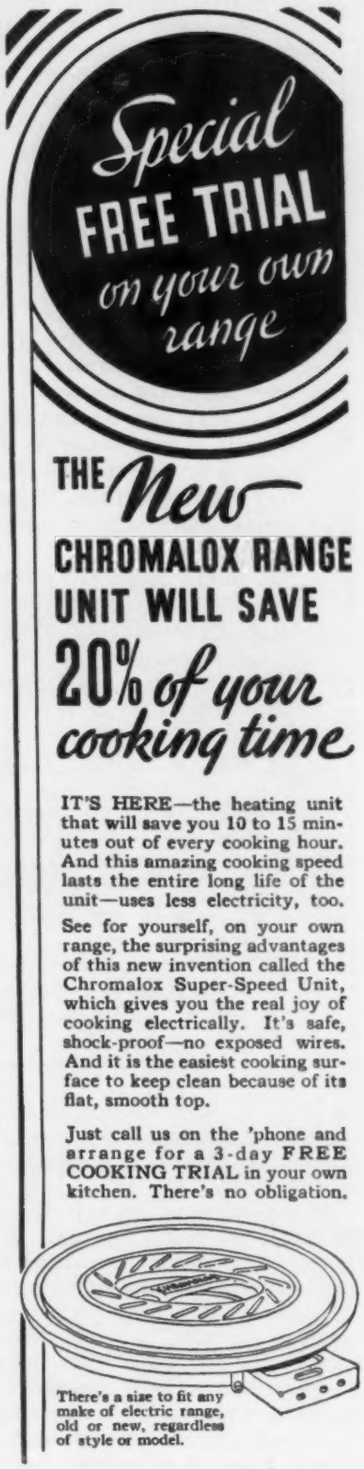
The campaign is being carried out in six steps, which are outlined in a prospectus prepared by the manufacturer and furnished to the sales departments of the participating companies. From its records, the utility determines the number and location of all ranges on its lines. Then a sales letter, with a descriptive folder enclosed, is sent to each owner of an electric range, offering a free 3-day trial of a Chromalox unit in her own range. This letter stresses the modernization theme and suggests that advantage be taken of the continuous improvement that has taken place in electric range construction. Supplementing the letter, advertising, of the type shown in the accompanying illustration, is carried in the local papers.

With the customer thus prepared, a power company salesman makes a personal call and secures permission for a trial installation, emphasizing that no obligation whatsoever is involved. The unit is installed by the service department and left for three days. During this time the housewife is enabled to experiment and compare the cooking speeds of the old and new units and experience indicates that a high speed unit practically always sells itself.

At the end of the three day period, a second call definitely ends the sales effort. Previous campaigns in other sections of the country show that in more than 75 per cent of the cases, the customer purchased the unit which was already installed, in one town over 300 units being sold to the 400 range owners. In case the sale is not made, the customer has been made to appreciate what can be expected of the modern electric range. Completed sales pave the way for future appliance sales, insure that the customer will be more satisfied with electric cooking, and present an opportunity to the utility for making new friends and building the good will of customer interest.

Naturally, the details of the operations were varied to suit local requirements. In one instance, where natural gas was a competitor, the 2,000-watt unit was recommended in order to give the maximum cooking speed. In all cases the manufacturer's representatives work in complete cooperation with the utility salesmen, furnishing demonstrations, literature and planning for greater effectiveness of the sales efforts.

Although the campaign has not been under way long enough to obtain any tabulations of the results, participating companies are enthusiastic about its possibilities and confident of reaping more than a satisfactory reward in new customers, new prospects and increased load.


Special
FREE TRIAL
on your own range
THE New
CHROMALOX RANGE UNIT WILL SAVE
20% of your cooking time
IT'S HERE—the heating unit that will save you 10 to 15 minutes out of every cooking hour. And this amazing cooking speed lasts the entire long life of the unit—uses less electricity, too.
See for yourself, on your own range, the surprising advantages of this new invention called the Chromalox Super-Speed Unit, which gives you the real joy of cooking electrically. It's safe, shock-proof—no exposed wires. And it is the easiest cooking surface to keep clean because of its flat, smooth top.
Just call us on the 'phone and arrange for a 3-day FREE COOKING TRIAL in your own kitchen. There's no obligation.
There's a size to fit any make of electric range, old or new, regardless of style or model.

Typical advertisement being used

IS Lighting Neglected?

Two Indexes Which Reveal That Lamps Need Replacement in Commercial Installations and That Interest Is Keen in Improving Domestic Lighting

NORTHWESTERN COMPANY MAKES COMMERCIAL RESURVEY

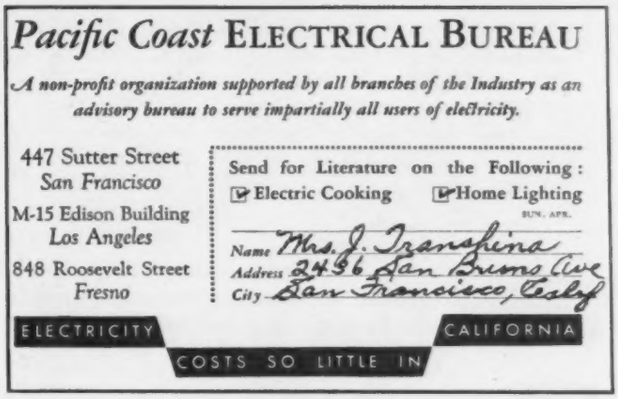
A RELAMPING campaign, following a survey of 725 commercial lighting customers, resulted in an increase of 42 kw. of commercial lighting for the Northwestern Electric Co., Portland. The survey was conducted after dark so that the character of the lighting of each of the customers could be observed under actual conditions. Customers having unlighted or under-wattaged fixtures were noted and placed in line for solicitation for the following day. Solicitors followed up these prospects, carrying with them lamps of various wattages so that the deficiency could be supplied on the spot.

Out of the 725 customers surveyed, 125 were found to have proper lighting. The other 600 had either one or more empty fixtures or were using smaller wattage lamps than the character of their installation demanded. Of these prospects 417 were not interested; 105 were classified as future prospects; and 78 were sold lamps to bring their installations up to standard. This number, which is 10.8 per cent of the customers surveyed and 13 per cent of the prospects found, increased their existing load by a total of 42,040 watts. They bought from the company 213 lamps of wattages from 100 to 500, or a total of 33,700 watts.

The discrepancy between the wattage of the lamps sold and the total wattage added arose from the fact that no attempt was made to cut in on established lamp contracts or established custom in buying lamps from dealers other than the company.

This relamping campaign was considered highly successful in that the cost of adding this commercial lighting load was nominal. It is felt that a recheck of the situation every few months might prove profitable, since it is realized that depressed economic conditions exert a powerful influence on store-keepers to make small operating savings through cutting down on the number of fixtures used or through using smaller wattage lamps.

Syndicated window display on home lighting used in all Pacific Gas and Electric Co. offices during September


Pacific Coast ELECTRICAL BUREAU

A non-profit organization supported by all branches of the Industry as an advisory bureau to serve impartially all users of electricity.

447 Sutter Street
San Francisco
M-15 Edison Building
Los Angeles
848 Roosevelt Street
Fresno

Send for Literature on the Following:
☑ Electric Cooking ☑ Home Lighting
SUN. APR.
Name Mrs. J. Iransfina
Address 2456 San Bruno Ave
City San Francisco, Calif

ELECTRICITY COSTS SO LITTLE IN CALIFORNIA

Advertising pays. Sample of coupon from Pacific Coast Electrical Bureau advertisement requesting data on home lighting and electric cooking

INQUIRIES INDICATE HOME LIGHTING INTEREST

By VICTOR W. HARTLEY

Assistant Managing Director,
Pacific Coast Electrical Bureau.

THAT public interest in home lighting warrants more attention from the industry as a whole, and particularly in the commercial programs of light and power companies, seems to be indicated from an analysis of inquiries developed during 1932 from the advertising being conducted in California by the Pacific Coast Electrical Bureau.

A campaign to popularize various electrical applications is being run in magazines having a statewide coverage. The list of publications being used includes "Sunset," "Journal of Development," "West Coast Builder," "Architect and Engineer," "Arts and Architecture," "Southwestern Builder and Contractor," "Daily Pacific Builder," "California Citrograph," "California Cultivator," "California Grower," "Farm Bureau Monthly" and "Pacific Rural Press." Subjects covered by the advertising so far this year and to be covered during the balance of 1932 include home lighting, Red Seal wiring, cooking, refrigeration, industrial electrification, commercial lighting, air heating, Christmas lighting and various phases of farm electrification. Each advertisement carries a coupon to make more convenient a request from the reader for information on electrical applications in which he is most interested.

During the first eight months of the year, a total of 540 coupons have been returned to the bureau office requesting additional information on some specific electrical use or appliance. Of this total 332 inquirers, or 61 per cent, have asked for data on home lighting. Such a result might be expected if there was a preponderance of home lighting advertising copy. Such, however, has not been the case, as only a small proportion of the advertisements have been devoted to this subject and only one in "Sunset," the magazine with the widest general circulation.

A complete tabulation of all of the inquiries received, classified according to subjects, follows:

Home lighting	332
Red Seal wiring	54
Electric cooking	33
Electric refrigeration	15
Air heating	3
Air cooling	1
Water heating	1
Farm electrification	95
Incubators and brooders	25
Milk cooling	17
Feed Grinding	15
Farm lighting	14
Pumping	14
Soil heating	2
General	8
Miscellaneous	6

The method adopted for handling these inquiries is to send to the consumer making the inquiry copies of such published material and pamphlets as the bureau has available and then to turn them over to the power company in whose district the consumer resides. Reports are received by the bureau on the outcome of these calls. As evidence of the value of this advertising, extracts from some of these reports may be cited. One states, "Mr. Hunt is a prospect for a 2-hp. refrigeration compressor." Another, this time in response to a high bill complaint, says, "As a result of this visit, Mr. Gledhill was able to report not only that Mr. Thomas admitted he had an erroneous idea as to the service charge, but that he also came away with a contract for a 15-hp. motor."

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Sell Air Conditioning —*It's Being Done!*

Swift Appraisal of Western Installations Illustrates the Preeminence of This Development as a Load Builder

AIR CONDITIONING "is going over" in the West, and in such a way as to prove conclusively that there is a real market in this section. The installations predominate in no one type; they vary from that for the small shop to that for the giant factory, from the home and office to the large building, as the accompanying pictures show.

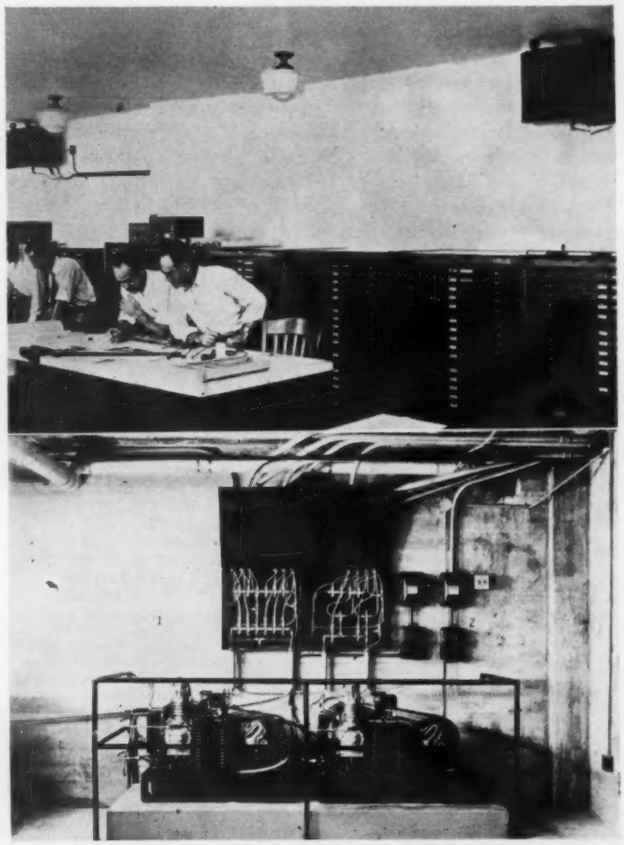
By far the most representative and complete air conditioning system in the West is that in the Southern California Edison Bldg., in Los Angeles. This thirteen-story structure, fully described in the May 1, 1931, issue of Electrical West, has a total connected load of more than 5,000 hp., of which 1,257 hp. is used for ventilating and cooling and 2,029 kw. for heating. Still other large buildings with modern installations are the San Joaquin Light & Power Bldg., in Fresno, Calif., with a connected load of 191½ hp.; Paramount Theater, Oakland, with 276 hp.; and the Title & Trust Bldg., Phoenix, Ariz., with 365 hp.

Many department stores have found it desirable to condition the air in the grocery, candy and fur sections. Meier & Franks, Portland's largest department store, recently installed fourteen air-cooling units in the beauty department; additional units will be placed in other departments in the near future.

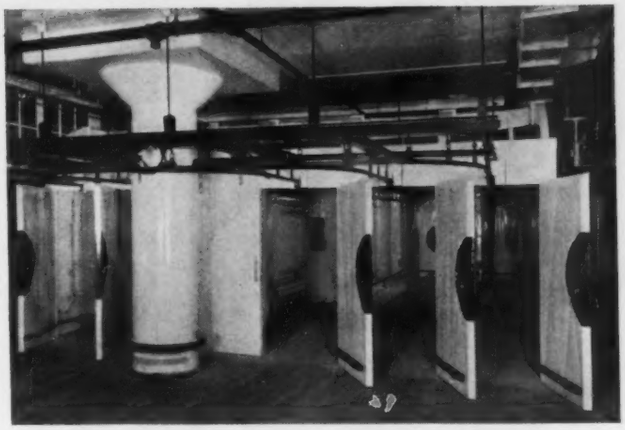
Tangible results from air conditioning these large structures make such installations both desirable and profitable. Tenants of office buildings, working in clean, vitalized air at comfortable temperatures and humidities, produce better work with less fatigue. In public buildings, such as theaters, hotels and stores, customers are more comfortable and stay longer; the resultant increased patronage and goodwill is an inducement to all establishments to install such equipment to meet the competition.

Intangible results, not readily apparent, include savings in cleaning bills, in clothing, linen, furniture, rugs and tapestries, and a general absence of objectionable noise and dust.

Similarly, the benefits of air conditioning extend into the industrial and construction fields. Notable examples of the latter are the installations in that portion of Boulder City which is required for housing the 3,500 workers and in the administration building of the Six Companies. Prevailing high temperatures there make efficient work impossible without air conditioning. In the administration building alone there are fifteen individual cooling units located in various rooms, with refrigeration supplied by three compressor units. A



Unit air conditioners make work not only pleasant but possible in the administration building at Boulder City, Nevada, headquarters for Hoover Dam construction activities. Bottom—Compressor units which supply the refrigerating medium to the unit air coolers shown mounted near the ceiling in the upper photograph



The modern bakery finds that conditioned air improves the texture and quality of its products, as this view of a proof-box will testify. On the column in the center of the room are instruments which control the air furnished by the overhead duct system

connected load of 16½ kw. is sufficient to maintain a 20 deg. F. differential between indoor and outdoor temperatures.

In industrial lines, Cramers' Bakery, at El Centro, Calif., and Bradford Baking Co., in Los Angeles, have found that air conditioning has made working conditions better and has resulted in generally improved standards and a greater uniformity of product. Safeway Stores were among the first to see the advantages of air conditioning their many manufacturing departments, and have had notable success with it.

Typical of the benefits that may be expected is the saving of many dollars in preventing premature milk spoilage in the storage room of the Millbrae Dairy, Millbrae, Calif. At Olive Heights, Calif., an orange pre-cooling plant is air conditioned by a connected load of 152 hp., to assist in maintaining the quality of the fruit during storage, packing and shipping.

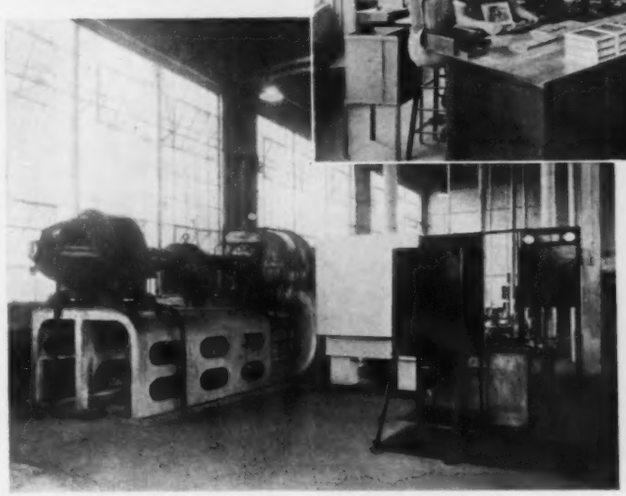
The office of the Needles Gas & Electric Co., Needles, Calif., has been equipped with three individual units, a connected load of only 3¼ kw., but these units maintain a temperature of 80 deg. F. inside the building when the outside thermometers are registering around 106 deg. in the shade.

Domestic applications bring the industry nearer to the completely electrified home. From the load-building standpoint, air conditioning presents possibilities undreamed of with other appliances. For example, a large home in California's hot San Joaquin Valley has incorporated a central heating and cooling plant to serve its twelve rooms. This apparatus consumes 7 kilowatts per hour of operation, a good load for the power company, but an inconsequential consumption from the consumer's standpoint, considering the comfort, health insurance and cleanliness that are the direct benefits.

At present, central plant installations for homes are limited to the larger dwellings, but unit coolers make this modern comfort available to the more modest incomes. Also, in homes not now equipped with re-circulating air heating systems, the individual cooling unit can be installed readily. It is not at all unreasonable to expect that the air conditioning load of the future will equal the present domestic consumption for all purposes.

It has been proved that air conditioning can be sold in the West, so now all that remains is to enter the field with an effective sales plan. Probably the real question is whether to attack the home or industry first, but that is an individual problem. Granted, the starting will not be easy and results may be discouraging at first, even as they were with such now-accepted items as ranges and refrigerators, but returns eventually are certain to be worth any amount of time and money invested.

Right—Conditioned air in this Los Angeles cigar factory insures the manufacturer of a uniform product with better workmanship, and it insures the customer of fresh, moist tobacco. Below—Air plays an important part in the preparation of rubber for tires, so a central air conditioning plant was installed in the factory of a Los Angeles tire maker



Below—Candy packed in the conditioned air which comes from the ducts over the workers' heads is less sticky, more readily handled, Safeway Stores have discovered

"We've Made Our Sales Force 10 —*but we haven't added a single salesman!*"

Power Companies Everywhere This Year Are Facing the Fact That Dealers in Their Territories Are Carrying Smaller Stocks and Are Making Only Feeble Efforts to Display and Promote the Sale of What They Carry; This Company Solved the Problem by Improving Its Tip System and Providing a Dealer Service

By H. H. COURTRIGHT
President and Manager, Valley Electrical Supply Co.

A CAREFUL study of merchandising conditions over the San Joaquin Light & Power and Midland Counties Public Service corporation's systems was made by their merchandising division, Valley Electrical Supply Co., a few months ago, to discover, if possible, in what way or ways additional stimulus could be added to the load-building activities.

Three pertinent facts were disclosed by the survey:

(1) There was less direct effort being made and fewer specialty salesmen being employed by dealers. This was due largely to the dropping of prices on the larger equipment until there was an insufficient profit to enable the dealer to pay commissions that would attract specialty salesmen. Especially was this true of radios and washing machines. In addition, the dealer was not fully aware of the possibility of specialty effort on the smaller appliances.

(2) Further, due to lessened volume because of economic conditions, both the wholesalers and manufacturers had greatly contracted their sales organizations. This has resulted in the withdrawal from this territory of at least two-thirds of these salesmen whose sole effort was to promote the use of more electrical equipment.

(3) Smaller stocks were being carried, which resulted in less electrical equipment on display. This was found to be due to a tightening of credit by the wholesalers, who were insisting upon all accounts being paid in 30 days rather than 60 days which had been their practice. There had also been a decided tightening up on credit by the finance companies; they were insisting on better risks and, on some appliances, shorter contract terms.

Two things were necessary if we were to meet our sales quotas: First, we must help the dealers; second, we must increase our manpower.

Accordingly, on the first of July we augmented our 1932 sales program to meet present conditions. Our accounting department worked with the wholesalers and were able to obtain more liberal credit for the stronger dealers over our territory, and is advising all cooperating dealers regarding their financial problems. By doing this, greater confidence is being created in the dealers and wholesalers. This activity has also helped our dealers with the commercial finance companies, as we have been able to obtain closer contact between the finance companies' representatives and the dealers; and by our close study of our dealers' financial conditions, we have been able to give first hand information to the finance companies, and have enabled them to be more liberal in their credit extensions in some cases.

We added to our field force a well-trained sales promotion man who is working under the following plan: He contacts each store in our territory once each month. He is so equipped that he can go into the dealer's store and arrange his windows and store displays, write show cards for him and keep him supplied with direct mail and promotional literature. He also writes newspaper advertisements for the dealer.

This is offered as a personal service to the manager of the store to help him with his merchandising problems; as such, it is being well accepted. Properly arranged and lighted displays of merchandise containing strong sales messages, both in the interior and the show windows of the merchant's store, are necessary to his success. Proper displays alone give the vital knowledge that tells the customer what the product is, what it does, what it looks like, what it costs; these questions, properly answered, make sales.

The very fact that this display man can and does arrange the displays of electrical merchandise in these stores so that attention is immediately aroused by them, not only tells the customer the advantages of these appliances, but keeps them to the fore in the minds and conversations of the dealer's own organization.

Besides arranging displays in dealer's stores, we keep adequate, modern, properly arranged and lighted displays in each of the power company's district offices. These are in addition to our main displays in our Fresno and Bakersfield retail stores and are devised not only to tell our customers the advantages of owning these appliances, but to familiarize the power company employees with the appliances they are recommending under the power company's "tip plan."

We are convinced that this display service which we are offering our dealers will be to the advantage of the entire electrical industry in this territory, since, by this service, better displays are maintained by the dealers and better displays create more interest in the minds of the consumers. Thus, the dealer is encouraged to carry adequate stock to maintain displays from which to sell, and is in a much better position to take advantage of the power company's cooperation under the new "tip plan."

Times Larger

By E. G. STAHL
Sales Manager, San Joaquin Light & Power Corp.

The second activity, which the survey showed as necessary if quota was to be made, entailed an increase in manpower. Obviously, under present conditions, it would be impossible to add a large group of salesmen; the sales tip plan offered the same result with a minimum of expense.

San Joaquin has had an employee tip plan for twelve years, A. G. Wishon first introducing the practice in 1920. For the first ten years no compensation was allowed for tips and slightly more than 1,000 were turned in each year.

It was in 1931 that the plan was reorganized into a contest and cash prizes paid for the leads. The results were startling: An average of 1,479 employees participated during the year, turning in 13,024 tips, of which 4,104 were turned into sales amounting to an additional load of 14,090 kilowatts.

During the first half of this year, the contest feature was discontinued and a straight cash payment made. The aforementioned survey disclosed that the number of tips not only had diminished, but that most of them were turned in by a few individuals, so we decided that the only way to get our entire organization thinking of new business tips was to show them wherein the stability of their jobs and the amount of their pay checks depended upon new business. Judging from past experience, we also decided that, if some visible record of the work of each employee were not made, the activity would die after the first period of enthusiasm.

Therefore, a chart was designed for each department and each district; beside the name of each employee in the department or district is a running record of the number of tips he has turned in and the number of sales resulting. Employees in the departments are divided into two teams which compete with each other. A team captain was selected to be responsible for all the employees on each chart, acting somewhat as a tip sales manager, discussing sales problems with his men singly and in groups and maintaining general enthusiasm.

Compensation for tips resulting in sales is based on this schedule: Red Seal wiring job, $1; water heater,$2; air heater (220 volts), $2; motor (2 hp. or larger), $2; range, $1; refrigerator, $1; radio, 50c.; and ironer, 50c. The plan also includes gas appliances, and comparable payments are made for tips in that field.

In the Fresno district, after this system had been put into effect, the number of tips rose from 6 to 60 daily. The quality dropped off somewhat, but this is being improved by employee experience, by instruction from team captains, by general employee meetings, and through "The Tipster," an employee sales tip publication issued monthly.

With the close contact we had established with the dealer through our dealer advertising and display service, we decided to go one step further and turn over to all dealers a daily copy of the new business tips in which they were interested. Each dealer first was mailed a letter explaining the nature of the tip plan and was requested to fill out and return a blank form in case he wanted the daily tip sheet. Nearly every dealer responded.

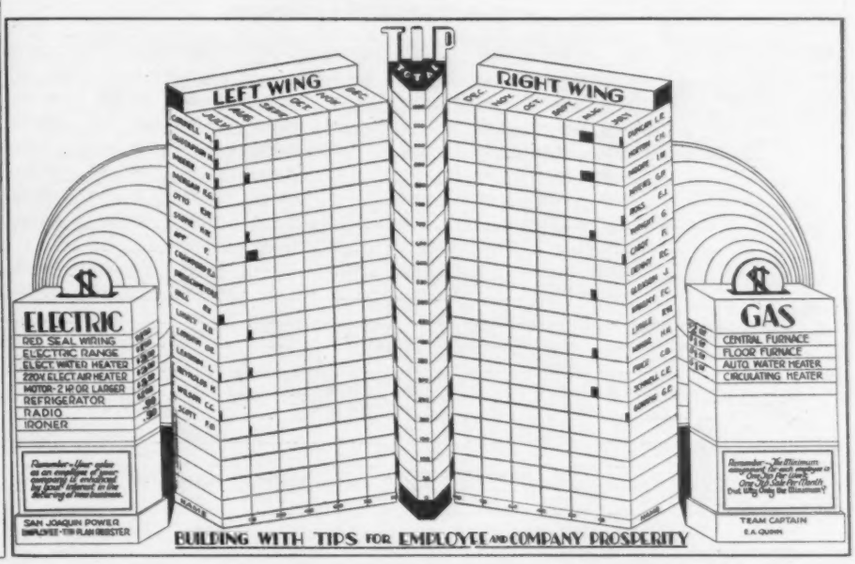
Since this plan went into effect (early in August), we have noticed a marked improvement in the dealer attitude toward the power company, and, while we cannot say definitely what the result will be, past experience indicates that new business sales are going to increase materially.

Thus we have supplied the deficiencies disclosed by our survey. We have our entire organization of 1,400 employees actively securing new business tips—ten times as many salesmen as before. We are getting more people into the stores of our dealers and, what we consider to be extremely important, our dealers are evidencing a more friendly attitude toward our merchandising policies.

Once a month, "The Tipster" is received by every employee. It is an inspiration sheet, full of instructions and tip news. To the right is one of the department charts used to keep up the enthusiasm of the members of the San Joaquin organization. The department organization is divided into two competing wings, but each department, as a whole, competes with other departments

THE TIPSTER

PULL TOGETHER



Cutting Dealers in on

By H. A. GARDNER
District Sales Promotion Manager, Puget Sound Power and Light Co.

Surveying the Sales Records for Its Territory, Puget Sound Power & Light Co. Substantiated the Conclusion That Dealers Are Vitally Important to the Success of any Load-Building Campaign

THIS year has brought to the management of every central station the problem of seeking out every possible source of consumption for electric energy. It also brought to many companies the added problem of conducting an aggressive load-building activity and, at the same time, coordinating merchandising activities with dealers in electrical equipment. With the decrease in commercial and industrial load, many kilowatts of central station capacity have been released from active duty and it has been the general practice among utilities to attempt to re-employ this capacity by developing additional domestic load.

Puget Sound Power & Light Co. has subscribed to this program and has carried the idea outside its usual scope. This company has always been a cooperative merchandiser of electrical equipment, with the result that, in the past, some creditable records for the sale of electrical equipment have been made in this territory. At the present time, it is among those utilities having the highest records of usage of electric service per domestic customer.

Facing 1932, the management of the company realized that even more intensive efforts than ever before would have to be made if normal growth of the company were to be approached and actual losses in certain phases of the business made up. Inasmuch as the domestic market still offered the best opportunity for revenue building under the present conditions, it was realized that new, more intensive and more extensive merchandising activities were needed.

Increasing contact with electrical dealers in the area served indicated a marked increase in their participation in load building work, and so it was decided that, before plans could be drawn up which would make the most of our opportunities, a more accurate picture of the market and facilities for serving it would have to be obtained. Of course, the merchandising records of the company were at hand, but at no time had an adequate survey been made of the general merchandising activities of the whole community, including both utility and electrical dealers. The first step, therefore, was to make such a survey.

This was done by going to the jobbers and distributors, who, through their excellent cooperation, supplied the necessary information relative to the total sales of electrical equipment through all outlets in the area served by the company. By the simple process of deducting from these totals the sales actually made by the company, a relatively accurate picture of the comparative volume of sales by the utility and by the dealers was readily obtained.

Dealer Relationship to Market

This comparison brought out some interesting and surprising facts. Of course, certain items, such as radio, were known to be exclusively dealer items, and it was assumed that this was where the dealers' principal merchandising strength lay. However, the survey showed that washer sales on the part of dealers were

1932 SALES EXPECTANCIES AND ESTIMATED REVENUE

	Company Sales KWH	Dealers Sales KWH	Company Sales Units	Dealer Sales Units	Average Selling Price	Company Merchandise Volume	Dealer Merchandise Volume	Est. KWH Consumption	Average Rate Per KWH	Estimated Annual Rev.
DOMESTIC APPLIANCES										
Ranges	6,000,000	1,500,000	4,000	1,000	$125.00	$500,000.	$125,000.	1,500	.0266	$200,000.
Refrigerators	576,000	1,224,000	960	2,040	250.00	240,000.	510,000.	600	.025	45,000.
Water Heaters	12,000,000	4,000,000	3,000	1,000	75.00	225,000.	75,000.	4,000	.008	128,000.
Washers	10,000	90,000	500	4,500	90.00	45,000.	405,000.	20	.03	3,000.
Ironers	60,000	300,000	300	1,500	90.00	27,000.	135,000.	200	.03	10,800.
Vacuum Cleaners	10,000	70,000	500	3,500	40.00	20,000.	140,000.	20	.03	2,400.
Radios		1,144,800		3,540	60.00		572,400.	120	.03	34,344.
Lamps			180,000	1,620,000	.25	45,000.	405,000.			
General Appliances	240,000	960,000	6,000	24,000	10.00	60,000.	240,000.	40	.03	36,000.
TOTAL	18,896,000	9,288,800				1,162,000.	2,607,400.		.0169	459,544.
FARM EQUIPMENT										
Farm Motors (Incl. Irrigation in Western Wn.)		240,000		300	$110.00		$33,000.	800	.03	$7,200.
Domestic Pumps		600,000		1,500	110.00		165,000.	400	.03	18,000.
Farm Units		1,400,000		3,500	15.00		52,500.	400	.025	35,000.
Irrigation Units (Eastern, Domestic, Outs)		1,000,000		50	150.00		7,500.	20,000	.0157	15,750.
TOTAL		3,240,000					258,000.		.0234	75,950.
COMMERCIAL APPLIANCES (Cooking & Refrig., Including Counter & Power Equip.)										
TOTAL	1,831,200	4,408,800	Connected KW 763	Connected KW 1,837	per KW $30.00	$22,890.	$55,120.	Min. per KW 2,400	.0175	$109,200.
IMPROVED LIGHTING										
TOTAL		3,000,000		Connected KW 3,000	per KW $30.00		$90,000.	Min. per KW 1,000	.025	75,000.
GRAND TOTAL	20,727,200	19,927,600				1,184,890	3,010,520.		.0177	4719,694.

This breakdown and tabulation of sales expectancies shows to what extent dealer activities influence utility load building. Interesting is the fact that each contribute essentially the same number of kw.-hr. output from sales, but that the dealers' dollar volume is approximately three times that of the utility

Load-Building Profits

over ten times those of the company; on vacuum cleaners, eight times that of the company; and that dealers' lamp sales exceeded those of the company by 900 per cent. Many other items showed the same surprising comparisons and, therefore, it was apparent that if the maximum load building result was to be obtained, the dealer merchandising activities most certainly should be taken into the picture and should continue to receive every reasonable assistance from the company. The survey also showed that certain items, namely, ranges and water heaters, were being sold somewhat more actively by the company than by the dealer. The company's range sales were approximately four times those of dealers and water heater sales were three times as large as dealer sales.

Summarizing the entire survey, two conclusions were apparent: One was that any electrical merchandising activity which was to be confined to the company alone would be overlooking a large part of the field, as 75 per cent of the total gross merchandising business was done by dealers. The other conclusion was that there was a definite place in the program for both company and dealers and that company participation was essential as the devices sold to a greater extent by the company are the higher consumption class.

General Plan for Utility Merchandising

The first step in setting up the plan was to determine the lines along which the efforts would be directed. There are so many phases to load building that some limitation was necessary, particularly at the start of the activity. Classifications decided upon were four in number: domestic appliance, commercial appliance, farm electrification and improved lighting. The next step was to break down the sales expectancies for each district and to set them up in such a way that each subdivision of the company would know what was expected, not only of the company stores in that area, but also of the dealers with whom they were working. Several important policies then were determined. Realizing that one of the principal points of contention between dealers and utilities lies in the competition of salesmen, the company adopted the policy of placing all salesmen of merchandise on a straight salary, thereby removing the so-called commission evil. As the survey indicated that the company's major activities would be in connection with ranges, refrigerators and water heaters, the policy of concentration on these three items was adopted with only minor activity on all others. Other items of merchandise would be stocked to a small extent, but no aggressive sales methods were to be employed. At present this stock is carried to keep up standards of equipment, maintain interest and for the convenience of customers.

Cooperative Advertising

In view of the great part played by the dealers in the load building picture, it appeared to be good business to give them every possible help in the way of advertising and sales promotion. Therefore, in order to put this program across, every newspaper advertisement on merchandise carries the line, "See Your Electrical Dealer for Electrical Appliances." This scheduled newspaper advertising during 1932 places this message in daily papers 6,960,000 times. This message appears 2,400,000 times in community and weekly papers, which means that, by the end of 1932, the invitation to see electrical dealers about electrical appliances will have been sent to the public through newspaper mediums slightly less than ten million times. Radio arrangements utilized by the company provide an average time of two hours and fifteen minutes per day over Seattle radio stations. Continuity for all of these radio programs also carries the thought of "See Your Dealer." An artistic imprint varied for each month of the year, but all carrying the same thought, is placed on every bill rendered by the company. Slightly less than two million bills will have been mailed out by the end of 1932, thereby sending this message to all of our customers twelve times during the year.

In the outdoor advertising field, eight showings on ranges, refrigerators and water heaters carried dealer imprints, which further goes to convince the public that electrical merchandise is available at many different sources. In connection with farm electrification activities, which have a distinct part in the program; the average amount spent by the company on this work represents about 13 c. for each dollar's worth of electrical equipment sold to farmers. The company does not merchandise farm equipment, but is constantly developing and promoting new and improved applications of electrical equipment to farm problems. The farm market is cultivated actively and dealer outlets are developed to supply the market. The employees of the company are a load-building organization and are encouraged to work with dealers on merchandise prospects. When an employee of the company gives assistance to a dealer, the employee receives the same credit as though the equipment were sold on the company's own sales floor, but no bonuses are paid on company sales. It is believed that these constitute real helps to the dealer in his merchandising and the dealers realize that, if the company were not in the picture, they would be in no position to carry on the advertising and sales promotion work mentioned.

Establishing Confidence

Selling this program to the dealers was accomplished by making resident managers and district supervisors responsible for contacting the dealers in their respective territories. A folder was made to present graphically the sales expectancies for the various units, showing the proportion of company sales and dealer sales; an outline of the advertising and promotional help was also given. Each dealer was then called upon and the whole program explained. All that was asked of the dealer was that at the end of each month's business he make a report of the number of units of the various types he had sold. This, of course, took time, inasmuch as the confidence of the dealer had to be obtained and the assurance given him that the reports he made were to be kept in strict confidence. However, by calling regularly each month and by being perfectly willing to discuss freely any questions or criticisms of the company or its policies which the dealer might have, his confidence was established. Records of unit sales for each month for each dealer now are kept by the

company and a total drawn from the aggregate. The reports are obtained in the early part of the month for the month preceding. Periodically, the men who contact these dealers are brought together for a discussion of any problems which have come up or any difficulties which have been encountered. This makes the monthly calls on the dealers a real service to them.

Gratifying Results

Results of this activity to date have been gratifying because, in addition to increasing load materially, they have brought out a substantiation of the estimates made at the beginning of the year. Figures available for the first seven months of the year show that the total merchandise business done by the company and dealers in the central division represents 7,068,000 kw.-hr. of annual consumption. Of this, the company sales contributed 3,102,000 kw.-hr. and the dealers' 3,966,000. The distribution of sales for the various units has followed remarkably close to the estimate set up and the dealers' gross merchandise sales is approximately three times that of the company. It is encouraging to note that as the year has progressed the proportion of dealer sales on the three major units which the company has been handling (ranges, refrigerators, and water heaters) has been increased materially. During one month of the year, the reported dealer sales practically equaled those of the company. The consumption per domestic customer is holding up well for present conditions, which proves that this load is making itself felt as a real benefit to the system.

Likewise, the dealers in the territory are, in general, well satisfied with the arrangement and appreciate the help that is being given them. The company has on file from dealers several unsolicited comments to this effect, and the whole-hearted cooperation and confidence being placed in the company by the dealers is adequate proof that they are convinced that the company is sincere in its desire to help them. Facilities for connection of electrical equipment and services of home economists have been extended to stores; they feel perfectly free to call upon the company for any assistance it is able to give because it has been proved to their satisfaction in a number of instances that the company is just as anxious for them to sell equipment as it is to have the sale go through company channels. The dealers in the Puget Sound area are, for the most part, convinced that the power company's objective is to sell kilowatt hours. Inasmuch as their business is merchandising, they are glad to utilize all of the help that this company can give, to the end that their merchandising business may be better. This, in turn, insures the company that its kilowatt-hour sales will so increase that its promotional activities can be continued.

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Be It Ever So Humble—

Salesmen send their prospects in to see the appliances actually in operation, and the home service worker thus aids in closing the sale

Home Service Is an Insurance of Consumer Satisfaction That Pays Ample Dividends, Whether They Show on the Balance Sheet or Are Listed as Intangibles

HOME SERVICE precedes and follows the sale. It is the preparation of the field for the acceptance of the electrical appliance; when the appliance is sold, home service is the guarantee of satisfaction in its use by the customer. This is its fundamental purpose.

Methods of procedure in home service differ with local conditions, naturally. While practically all companies conduct certain essential services in much the same manner, a great many individual touches are given to the work in particular sections, according to the practices of the company. Space does not permit a detailed summary of the many services performed by the home service departments of western utilities, but a brief, composite outline of the range of this activity should be useful in checking against local practice—perhaps to inspire new or enlarged service in directions not now engaged in. For brevity, company names will be omitted.

Some Things Companies Do

Range sales are followed, in practically all companies, with a personal call by the home service worker, to explain the operation and care of the electric range; to demonstrate cooking simplicity, time control and temperature control; and to teach the economical use of electricity. One company serving a large rural territory first sends a letter, enclosing a few hints and asking if the range operates satisfactorily, and whether trouble has been experienced. Those replies indicating

DON'T Do It—Home Service Workers

DON'T dress in such a way as to make your customer feel ashamed of her own appearance. Be neat, but not gaudy.

DON'T show off your own cooking skill by making a fancy cake. It is the practical, everyday meal that most range users want to know how to prepare quickly.

DON'T exhibit your superior knowledge. Any woman, even you, resents being patronized. She appreciates praise for the things she does know how to do. Give her credit for these and then tell her how "some women find it easier to do" the task in question.

DON'T require elaborate equipment to work with—special beaters, saucepans and the like. Your job is to make electric cooking simpler than any other kind of cooking, as well as cleaner and tastier. Remember, she is afraid it is going to be complicated, and how a woman hates to change her habits of doing things!

DON'T KNOCK! Even if it isn't the kind of range you prefer, neither you nor the company—and remember, you are the company to your customer—can afford to be "snooty" about it. Her satisfaction with ELECTRICITY, not the range, is up to you.

difficulty are singled out for immediate attention, while others are cared for in routine fashion.

Cooking schools are held, some in connection with shows, fairs or exhibitions, and others, more intimate, for small groups. One company holds schools for apartment house tenants in the apartment house itself. Other companies hold neighborhood cooking demonstrations at some electrically-equipped home. All companies cooperate with women's clubs and schools in domestic science classes.

Model kitchens are maintained by most companies, where appliances are demonstrated to visitors under actual operating conditions. Some companies have salesmen send prospects to these kitchens to try the equipment before buying or to have it demonstrated. A tip from one company doing this type of work is that every visitor to the model kitchen is shown the operation of some small appliance. This focuses attention on the appliance as a really useful article, and does not allow it to remain in the mind as an ornament only.

Some companies have home service workers hold demonstrations in dealer stores, aiding them in sales and giving concrete evidence of power company cooperation.

One company holds luncheons for builders and architects, whereat an entire meal is cooked electrically before, and sampled by, the visitors.

In one company at least, home service workers meet each morning with the sales staff to answer salesmen's questions and to show them how to overcome difficulties presented in making the range sale. Some companies turn over to the home service department all new appliances brought to the company for approval, allowing them to experiment and discover the articles' merits; report then is made to the sales manager. It serves to give the sales department many new sales angles and keeps the home service department up to date on latest developments.

Radio talks in the morning, giving cooking and housekeeping information, are used by only a few companies, but more are making use of this "before the sale" selling method.

Testing appliances reported unsatisfactory and instructing in their proper use likewise guarantee customer satisfaction and build good will. Talks on Red Seal wiring, and proper home lighting, with classes on lamp-shade making, all help to solve that most difficult of problems, lighting and wiring in the home.

Altogether, the work of the home service department is a matter of caring for the many little details; and no one so well as a woman knows how important are the little things of life, of home and of decoration.

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Moving the Range To Mahomet

WHEN Mahomet, so the story goes, would not move to the mountain, the mountain was moved to him, or vice versa. At any rate, moving a mountain is child's play, sometimes, compared with moving an employee to go and look at a range.

Determined to demonstrate the virtues of electric cookery to its employees first, so that they might diffuse their enthusiasm for it among their friends and neighbors, the Los Angeles Department of Water and Power found it had complex problems because of the extensive area of the city and the number of district headquarters located at great distances from the main office. When a special range sales campaign for employees was conducted recently, Chester Dye, range sales supervisor, designed a traveling truck display to reach these groups, comprising more than 2,000 employees.

Three typical range models were mounted on a flat-bed truck, which was also equipped with a loud speaker system. In addition to this display a range was connected at each district office and from it biscuits and coffee were served. During the lunch hour a salesman was on hand to talk about the ranges, explain their operation, answer questions and take orders. Results were reported as very satisfactory.

Trade Relations Is a Human Problem

Six Months of Study and Observation in Close Contact With all Branches of the Industry Places the Author in a Position to Offer, in This Report, Unbiased and Unprejudiced Suggestions, Designed to Promote Better Understanding and to Build More Business

By F. M. BANKS

Chairman, Joint Trade Relations Committee, Pacific Coast Electrical Bureau and Pacific Coast Gas Association

FOR THE public to benefit to the fullest extent in the purchase of electric utilization appliances, there must be coordination and understanding of the interests and methods employed by the manufacturers, distributors, wholesalers, retail agencies and utilities who are interested in seeing these appliances sold and used. Without this coordination and understanding, experience has shown that there will be ill-feeling, rancor, loss of business to all parties concerned and, finally, no useful public service.

An intensive field survey of conditions as they exist in California, Nevada and Arizona brings to light some interesting observations of value to every branch of the electrical industry. In the first place there was no evidence of the authorized use of some of the practices which have, heretofore, occasioned no little dealer complaint (such as price-cutting, premiums, unwarrantedly long term payments or excessive trade-in allowances). There does exist some difference of opinion on the questions of salesmen's remuneration and the payment of a bonus or commission to employees on sales leads, which are, apparently, from the dealers' standpoint, the principal remaining controversial factors in the appliance merchandising set-up.

There are indications also that a more rigorous policing of the actual selling personnel would prevent, in many instances, the repetition of those infractions of utilities' sales policies which are of disadvantage to retailers and detrimental to friendly trade relations. The plea of the "human element" may be used as the reason for the first offense, but it cannot be allowed to become the excuse for its continuation. It is recognized that general policies usually can be expressed only in general terms, and that their interpretation by the men on the firing line may be colored (possibly unintentionally) by the element of self-interest. The fact remains that strict adherence to the spirit as well as to the letter of sales policies is a matter for close attention on the part of all executives, head office as well as district or territorial, to the end that misunderstandings, which inevitably result either from misinterpretation or disregard of these policies, may be reduced to a minimum.

Certain phraseology or terminology frequently used in discussing load-building operations has a distinctly adverse reaction in the field. The use of the word "merchandising" as descriptive of the load-building activities carried on by the utilities is one. Another is the practice of defending or explaining these activities on the ground that they are forced upon the utilities by reason of inability on the part of normal retail outlets to function adequately.

To the average merchant the word "merchandising" has but one meaning. To him it symbolizes what he himself is doing: Buying goods in such quantities and varieties and at such prices that, by advertising, display and attractive mark-up, he may create volume sales and produce a profit for himself. This certainly does not picture correctly either the intent, the operation or the result of the utility companies' participation in the distribution of utilization appliances, but the use of the term "merchandising" immediately places it in that category, resulting in an unfortunate and unfavorable reaction on the part of the average retailer.

The implication of failure on their part is especially resented by the trade, and forms the basis for much of the antagonism toward the utilities. If the entire distribution system fails to function, the blame cannot be placed upon one particular link of the chain with any degree of justice. The problem is, then, one of complete understanding and cooperation on the part of all links in the chain, including the utilities themselves.

Continued investigation of this problem of trade relations leads to the conclusion that the fundamental, underlying cause of a large portion of the trouble is either mis-information or lack of information on the part of the dealers as to what the utilities actually are doing and trying to do. This same condition holds for too many utility representatives as well, who either do not understand the general sales policies of their principals or who deliberately run counter to the spirit or the letter of such policies. The same condition may be ascribed as the cause for undue sympathy of some wholesalers' and manufacturers' salesmen for the disturbed dealers, and may explain instances of possibly unethical sales methods employed by utility appliance salesmen.

If such is the case, then it would seem that an intensive educational campaign is indicated as the most effective means of meeting the situation. Since education, like charity, begins at home, the first group to whom this campaign should be directed is the utility force itself—the rank and file whose contact with sales policies places them in a position to influence trade relations. Many companies have inaugurated such plans. It is unfortunately true that the load-building activity of a utility company is not always accepted and valued by some uninformed members of the organization as a very vital and necessary feature of successful operation, but is thought of as an annoying and frequently troublesome non-essential which could be abandoned completely with profit and benefit to all. Such a sentiment expressed by even the humblest utility employee simply tends to stimulate trade antagonism. It may be urged, therefore, that each utility undertake, or where the matter is now in hand, emphasize, the inculcation in the minds of all employees of a thorough-going idea of the vitally important part the load-building activities play in the development of the industry, in the betterment of service and the lowering of rates to consumers, and in assisting the trade by increasing its sales potentialities.

Hand in hand with this program inside the utility organizations there should be a companion program to institute regular dealer contacts by division and district executives for the purpose of creating a better understanding of the problems of the utilities. Such a program should be designed so that the story of utility load-building and trade-stimulating activities may be told and SOLD to the dealers.

The Industry Organizes

To Sell One Million Ranges

By W. L. FROST
Vice-President in Charge of Sales, Southern California Edison Company Ltd.;
Pacific Coast Divisional Director, National Electric Cookery Council

Emblem of the crusading rangers, this very subtly suggests the freedom and liberty brought to the housewife by an electric range. At the bottom of the page, the plan of a model local range bureau

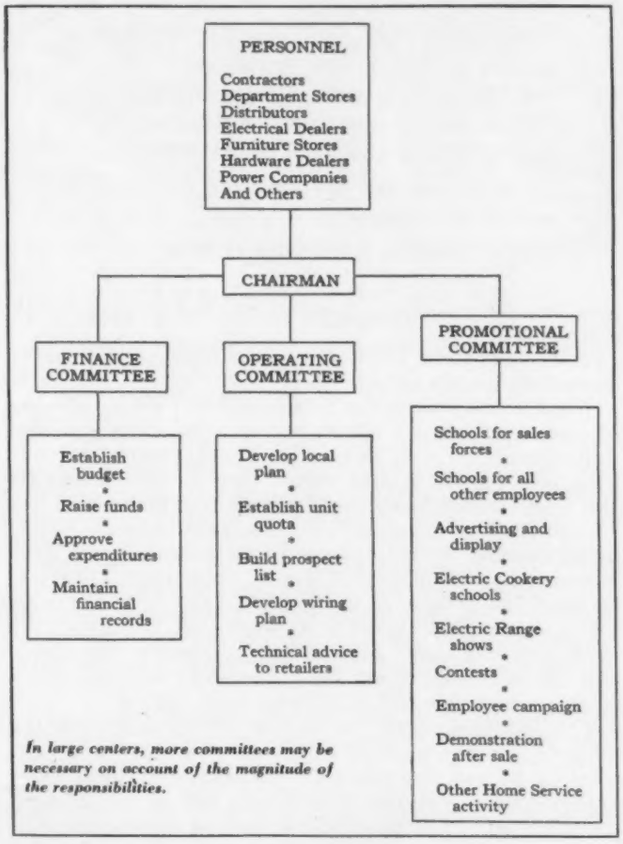
OUR industry has another opportunity to show its combined strength in the range campaign which is now being launched under the direction of the National Electric Cookery Council. And what an opportunity this is! With a background of national advertising that has never been equalled, together with actual selling helps for those of us who are directly on the firing line, this splendid program opens the way for our industry to lead the nation in its effort to work its way back to normal conditions.

Every effort put forth by the industry to sell the idea of electric cookery to the housewives of America has a two-fold benefit: It benefits the industry and it benefits the customer. No other phase of selling activity into which our industry enters can produce the manifold benefits which are made possible with the campaigning of the electric range.

Industry is electrifying itself as rapidly as it is possible for it to do so. On the other hand, the American home is being electrified only just as rapidly as it is possible for the electrical industry to sell the electrical idea to the American householder.

Experience has taught us that a united attack upon a sales problem of any kind is the type of action which produces satisfactory results. In the program which has been outlined by the National Cookery Council, not a single item essential to the success of the sales plan has been overlooked.

Here in the West, we believe that we have the machinery already in motion to take full advantage of the splendid background which this national campaign affords us, and we certainly will give our best efforts toward making a success of this, the most comprehensive industry plan which we have ever seen.



In large centers, more committees may be necessary on account of the magnitude of the responsibilities.

By W. N. CLARK
President, Southern Colorado Power Co.;
Rocky Mountain Divisional Director, National Electric Cookery Council

JUST as the electric range was an improvement on the old time sad iron, so the electric range will in due course supplant all other forms of domestic cooking wherever the best results are appreciated.

By M. L. HIBBARD
Vice-President and General Manager, Idaho Power Co.;
Northwest Divisional Director, National Electric Cookery Council

ORGANIZED as a great cooperative effort, nationwide in its scope, the National Electric Cookery Council will, I feel confident, make possible the further development of electric cooking in the home, even in our progressive Northwest, which now leads the country in the use of the electric range.

Even with the high domestic range saturations which we have in the Northwest—in one instance 47 per cent—there can be no possible reason for the feeling that the job is complete. We should not feel satisfied that our work has been well done until practically all of these customers use this modern method, which means so much to the house wife in cleanliness, convenience and freedom from drudgery.

We will have neglected our opportunities and have no one but ourselves to blame if our customers use anything but this inexpensive, modern method of cooking—which can mean so much to the dealers in providing a large volume of business both in new equipment and for replacements; to the contractors for the wiring of new installations, and as a step towards the completely-wired electrical home; and to the central stations in providing a market that can be depended on even in lean years for so large a block of kilowatt-hours.

To do this job as it should be done, we must first sell ourselves and our employees, the contractors and all dealers in electric appliances and their employees, so that we may have as large a group as possible of those, who from their familiarity with the use of the electric range in their own homes, can sell their friends and customers, and through this ever-widening circle bring about the result we desire to achieve.

Can Wiring Be Sold?

By A. E. HOLLOWAY

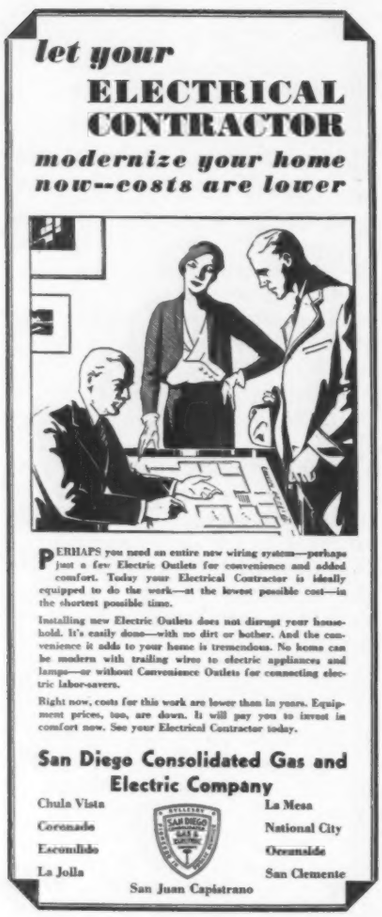
Vice-President and Commercial Manager,
San Diego Consolidated Gas & Electric Co.

ELECTRICAL service in the home has been one of the greatest factors in making modern home life more enjoyable and less labor-involved. The industry agrees that the fullest development of domestic electric service is a good and wise investment on the part of the home owner. But what is the industry doing to place this factor in home life on the high plane that it deserves?

Experience indicates that the present day owner who is building a new home is giving less attention to his electrical requirements than to any other part of the construction. More attention is given to the plumbing fixtures, to the painting, to the floors, to the roof, to almost any part of the building, than to the location of electrical outlets and the capacity of electrical circuits. Usually, the electrical layout is the last part planned and the first to be cut if the owner finds costs running more than he can afford.

What is the reason for this condition? First, because electrical outlets are not showy and the wires and conduits cannot be seen (which is proper), the wiring has no appeal nor decorative value; second, mainly because the home owner has never been taught or sold on the conveniences of adequate electrical service in the home; third, because the majority of home builders never have experienced the use of full and convenient electrical service. Here, then, is the present day job of the electrical industry: TO SELL ADEQUATE WIRING. We cannot depend upon the building contractor, the architect nor the home owner to tell us what they want; we must aggressively tell them what they NEED.

The industry today is paying the penalty for the tendency on the part of architects, builders and contractors to use the minimum standards of local ordinances or the National Electrical Code as a maximum specification. This, plus failure to give due recognition


let your
ELECTRICAL CONTRACTOR
modernize your home now--costs are lower
PERHAPS you need an entire new wiring system—perhaps just a few Electric Outlets for convenience and added comfort. Today your Electrical Contractor is ideally equipped to do the work—at the lowest possible cost—in the shortest possible time.
Installing new Electric Outlets does not disrupt your household. It's easily done—with no dirt or bother. And the convenience it adds to your home is tremendous. No home can be modern with trailing wires to electric appliances and lamps—or without Convenience Outlets for connecting electric labor-savers.
Right now, costs for this work are lower than in years. Equipment prices, too, are down. It will pay you to invest in comfort now. See your Electrical Contractor today.
San Diego Consolidated Gas and Electric Company
Chula Vista
Coronado
Escondido
La Jolla
La Mesa
National City
Oceanside
San Clemente
San Juan Capistrano

Wiring can be sold. This advertisement is an example of what the San Diego Consolidated Gas & Electric Co. is doing to help the cause along

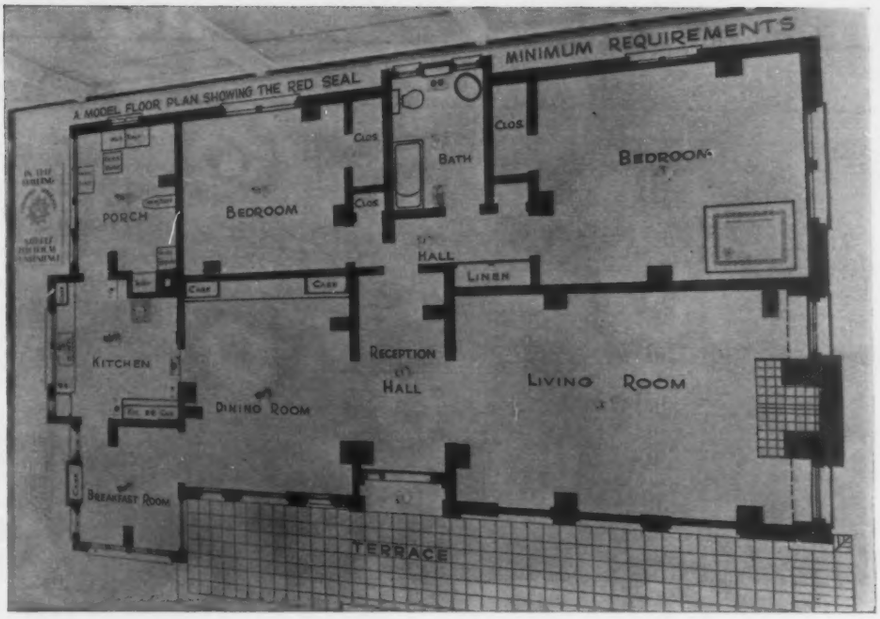
Sold Short

IF THE selling of stocks "short" was responsible for near panic in the financial affairs of the nation, the selling of wiring short will yet be responsible for a near paralysis of the electrical business as time goes on. On the shoulders of those who sell wiring short is a grave economic crime. It rests no less on those unthinking, well-meaning people whose "conscientious scruples" have led them to "save the public money" by advising or prescribing a minimum installation, than it does on those whose greed for an immediate job has caused them, blind to all else, to cut out essential circuits and outlets. On them will rest forever the blame for a senseless, profitless, almost malicious inconvenience to the public, and a permanent harm to the electrical industry.

Nobody benefits from a curtailed wiring job. Neither labor, contractor, manufacturer, utility nor, least of all, user, receives what is due him. Still worse is this: That the damage, once done, never can quite be undone. A poorly-, inadequately-wired house is almost doomed to stay that way. It is the breeding place of extension makeshifts and cheap substitutes. Only superhuman effort or drastic necessity ever brings to it any decently installed additions or rewiring. The cost of selling rewiring is a thousand times that of selling adequacy in the first place.

Let no one sell the electrical business at a permanent discount.

DON'T SELL WIRING SHORT!



Mounted on a large board, 9½ x 16 ft. in size, the Red Seal wiring diagram used in Pacific Coast Electrical Bureau promotional literature was enlarged so that the thousands who visited the Pacific Gas and Electric Co. model farm at the California state fair at Sacramento might see it. But more important still, instead of wiring symbols for convenience outlets, switches, center fixtures and the like, the actual outlets, switches and lamps themselves were installed and working. Frank Kiefer, northern region manager of the P.C.E.B., in attendance at the fair, was thus able to demonstrate by actual operation the convenience of adequate wiring. The reverse of the board was wired in plain sight in knob and tube wiring, neatly installed, to show farmer visitors the need for workmanlike installation. Luppen & Hawley, Inc., Sacramento Electragists, made the installation from Mr. Kiefer's design

to the ever increasing use of electricity for more and more services, has inconvenienced and handicapped the home owner and has caused actual monetary loss to him by shortening the life of the wiring installation or making necessary expensive alterations, extensions and replacements.

Almost as deplorable is the loss the industry itself suffers when a minimum standard, designed to assure safety, is accepted as a criterion for adequacy. The contractor loses because the wiring is skimped; the wholesaler and manufacturer lose because less material is required; and the power company loses because less energy is consumed. The industry must counteract the belief that because an installation meets code requirements, it will be satisfactory from the standpoint of the consumer.

Considerable progress has been made by the industry in setting up standards of adequacy for homes and stores. But even these are the minimum standards whereby comfort and convenience may be attained. Take, for example, the Red Seal Plan. What does it do for the home owner where applied?

It provides comfort and safety for present and for some future needs.

It provides adequate wire sizes.

It provides adequate outlet capacities.

It provides an adequate number of outlets properly placed.

It provides an adequate layout for satisfactory illumination.

It provides adequate inspection according to specifications in addition to city ordinances and national code. It assures this inspection outside of incorporated areas where there is no electrical supervision or inspection.

However, even with the Red Seal Plan, there are many cases where a Red Seal job will not be adequate for the consumer's requirements. The industry must remember that Red Seal is a minimum standard of adequacy, below which comfort and convenience cannot be secured.

New uses for electricity and the development of old appliances to do a faster, better job mean that even today's standards of adequacy will not serve for tomorrow. Just a few instances may be cited to prove this contention. Air conditioning has arrived. The waffle iron has been increased from 500 to 800 and 1,200 watts. The 500-watt electric iron has been replaced by the 1,000-watt automatic iron. Direct lighting with 40- or 50-watt lamps is being superseded by indirect lighting requiring 200- or 300-watt lamps. Auxiliary heating is becoming more and more popular. It is evident that today's convenience outlet circuit, with 20-amp. capacity, 8 outlets and No. 12 wire, shortly will be outmoded and inadequate.

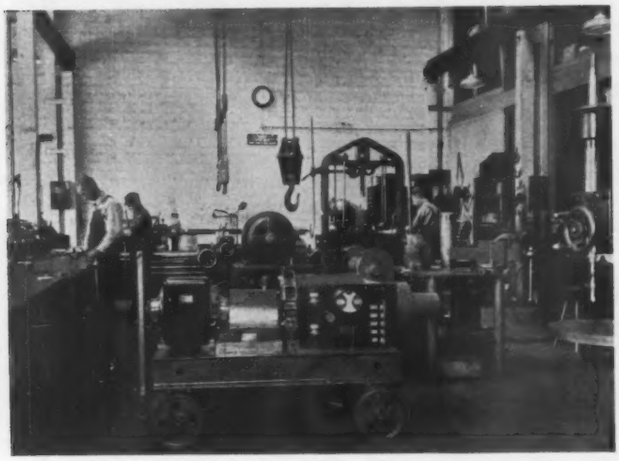
This job of assuring adequate and sufficient electrical service to the public rests squarely upon the shoulders of the whole electrical industry. Its foundation is wiring. Wiring must be sold, and every branch of the industry must do its share of the selling. Until wiring is sold, electric service in the home will never occupy the position in the home owner's plans that it merits, which is FIRST.

▼

New Books

HOUSE DESIGN, CONSTRUCTION AND EQUIPMENT, the fifth volume of ten publications of the President's Conference on Home Building and Home Ownership. Cloth bound, 6x9 in., 325 pages, available at $1.50 per copy from John M. Gries, executive secretary, President's Conference on Home Building and Home Ownership, New Commerce Bldg., Washington, D.C.—Of the 10 volumes being prepared by this conference, exhaustively treating every phase of housing and home building, this volume probably has the most interest to the electrical industry, since it contains chapters on services rendered by the electrical industry to homes. Part Three of the book treats upon heating, ventilating and air conditioning under the general heading of "Fundamental Equipment." Another chapter is devoted to electric wiring and lighting and a final chapter to refrigeration. In treating these subjects, the book is very fair, but cannot be called enthusiastic in any respect. In other words, no advantage is given electrical equipment over equipment operated by any other energy where economy is in favor of the other energy. It is a book, however, which should be read by everyone in the construction industry, since it presents such a completely refreshing viewpoint in regard to home construction. Undoubtedly, the book will have considerable influence in future building operation.

FIRST PRINCIPLES OF TELEVISION, by A. Dinsdale. Cloth bound; 6x9 in; 241 pages; illustrated. First edition. Published 1932 by John Wiley & Sons, Inc., New York. Price, $3.50.—This text uses the early experiments in television as a basis for explaining the various systems now in use. Elementary considerations of the art, the development of light sensitive devices and the various methods of scanning and reproducing are presented clearly with ample illustrations and sketches so that the material is readily assimilable to anyone possessing a fair knowledge of radio or electricity. Included is a presentation of the present state of television in America and foreign countries and chapters on methods of synchronism, image structure and transmission channels which already are problems of major importance. This work, one of the first published on this newly developed art of television, presents a comprehensive treatment of the progress in this new field to date.



Starting with arc welding sets designed and built in its own shop, Pacific Electric Motor Co., of Oakland, developed a specialty in welding supplies that grew by advertising

"Sufficient to the Job Is the Advertising Thereof," Seems to Characterize the Methods Used Effectively by the Motor Shops Who Do a Consistent Trade

Placed Shots Bring Motor Dealer Results

CONTRARY to anything that may be said by a generalizing, but not necessarily experienced, person, the advertising and sales promotion done by an industrial electrical contractor, or motor specialist, must be tailor made. It must be cut to fit the job at hand and, because margins in the commodities handled by these shops are limited, it must make the most effective use of every bit of fabric available. There cannot be much waste, else the results will not justify the expenditure. The market is restricted, therefore it must be hand picked.

As examples of effective means already employed by successful motor shops, a few specific instances will serve to demonstrate this general fact. While the companies described in the following represent a wide range of selling methods, each derived from experience, many equally effective methods have had to be omitted because of space limitations.

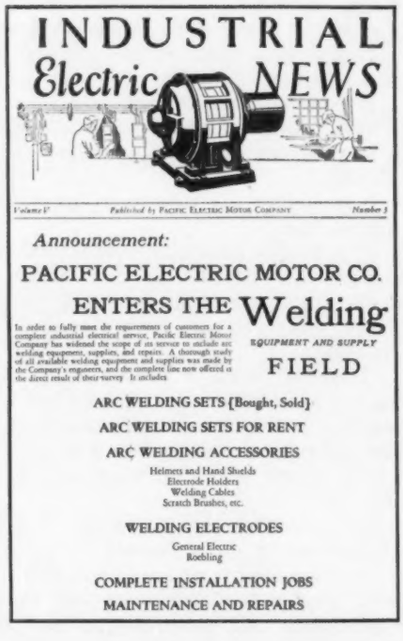
Arc Welding Campaign

One particularly effective advertising campaign is worthy of some detail. As a specialty line, requiring pioneer effort and considerable knowledge of the technique, arc welding offered enough potential profit to Pacific Electric Motor Co., of Oakland, to warrant an advertising drive among industrial plants of the East Bay area. The company had begun by assembling its own arc welding sets, with frame and carriage fabricated in its own shop. Later, the national manufacturer's product proved a more desirable article to sell, and so the campaign was launched by mail to encompass a new type of arc welder, complete stocks of welding rod in all special types and styles, and portable electric tools. All of these are related to arc welding and, hence, can be sold together, or at least mentioned in the same mailing.

A list of selected manufacturing companies, whose products were susceptible to improvement by the use of arc welding, was worked up. There was no waste circulation in it, for every name selected was chosen from personal knowledge of that firm's operations. The first letter mailed announced a display of the new welding set and invited an inspection—in fact, invited an actual trial of its operation at the Pacific Electric Motor Co. shop under actual shop conditions. It also announced a new type of high speed rod. Enclosed were a manufacturer's circular describing some of the welding set's virtues and a catalogue of welding rod types and uses.

Next followed another letter telling of the enthusiasm of those who had accepted the first invitation to try the welder, of their surprise that the motor dealer carried so large and assorted a stock of electrodes; it announced that the dealer was distributor for a well-known line of portable electric tools and other accessories "such as are used in your welding shop." It

A regular house organ sent to all customers and prospects carries feature articles and announcements about the welding equipment of this motor dealer establishment



INDUSTRIAL Electric NEWS

Volume V — Published by Pacific Electric Motor Company — Number 3

Announcement:

PACIFIC ELECTRIC MOTOR CO. ENTERS THE Welding EQUIPMENT AND SUPPLY FIELD

In order to fully meet the requirements of customers for a complete industrial electrical service, Pacific Electric Motor Company has widened the scope of its service to include arc welding equipment, supplies, and repairs. A thorough study of all available welding equipment and supplies was made by the Company's engineers, and the complete line now offered is the direct result of their survey. It includes

ARC WELDING SETS (Bought, Sold)

ARC WELDING SETS FOR RENT

ARC WELDING ACCESSORIES

Helmets and Hand Shields
Electrode Holders
Welding Cables
Scratch Brushes, etc.

WELDING ELECTRODES

General Electric
Roebling

COMPLETE INSTALLATION JOBS

MAINTENANCE AND REPAIRS

again urged a trial of the welder at the dealer's shop. Another manufacturer's circular was enclosed, as well as a catalogue of portable electric tools.

The third letter again told of the attention the display of welding equipment was receiving, and then went on to show that the company not only had welding equipment to offer, but also had a staff of capable engineers and skilled mechanics experienced in rehabilitation, maintenance and overhaul of electrical equipment of all kinds, as well as a construction department for proper installation of equipment. It enclosed a telephone card for emergency calls and another of the manufacturer's welder advertisements.

A final letter of the series enclosed a bulletin of the manufacturer giving more data relative to welding sets. "This bulletin is presented to you as a more permanent reference in connection with the equipment," it said. The letter then described other services available from the company (including second-hand and rental equipment) and offered term payments on application.

Designed to fit the motor dealer's selling job, the campaign brought expected results. The company has become a welding headquarters and, because of its complete stock, can serve its customers perhaps better than any other means of distribution of such material. It is active in promoting welding equipment and supplies. Every issue of its house organ, sent regularly to industrial concerns of all kinds in its territory, stresses welding equipment. Frank Boyd, general manager of the company, thinks this is an example of the effective selling and promotional job that a motor dealer can do when he can realize a reasonable profit from his efforts.

Including the Climate

In contrast to this step-by-step, planned program of advertising a product is the no less successful advertising done by V. R. Knight, manager of the California Electric Works, of San Diego. This company's advertising has the essence of novelty, of originality and surprise. It does unexpected things, but it consistently advertises. In fact, every advertisable feature of its service is capitalized. Trucks and cars used either by staff or crew are distinctively labeled and sloganized. Every letter sent out carries an advertising message. Every feature of company operation is given an interpretation to its customers and prospects. All of these messages are breezy and friendly.

Letters, for example, always carry a letterhead replete with selling information. For some time every letter that went forth carried a tiny photograph of the sales floor with a large display of motors, underneath which were typed these words, "These 200 motors are here for your convenience, ready for emergency calls from you." The latest stunt is one that would be expected of a loyal southern California firm: At the bottom of each letter is printed, "As indisputable evidence of San Diego's climate, yesterday's temperature was: High——— Low———," and the figures are typed in.

Each month postcards are mailed out to customers and prospects. These introduce the men of the company; sometimes they talk shop; sometimes they refer to a recent heavy rainstorm and ask if the motor kept dry. When the company was first organized, it issued a little pamphlet giving an outline of its services and a listing of its personnel. The company itself is owned by its employees, each of which is an officer or director as well as a specialist in some department of the work. This fact, likewise, is advertised.

Outside, on the front of the building, is the biggest neon sign in town, almost, since the company is agent for a sign manufacturer and makes no secret of the matter.

HERE THEY ARE, FOLKS
OUR
SERVICE TWINS
FRED AND ED
(SCHAAF) (WOODEN)
Whether you meet them on the Sales Floor or on the Telephone They Render You
Prompt - Dependable - Courteous Service for Electric Wiring Electric Motors and Repairing
Signs
Fans
Pulleys
California Electric Works
420 Eighth St. Main 2145 San Diego

Identification of its expert specialists was given both in word and cartoon on one of a number of regularly mailed postcards sent out by the California Electric Works, San Diego

Riverside, Calif., boasts of a motor dealer councilman, but neither the civic duties of Clarence Backstrand nor the engineering ingenuity of his brother prevent either from advertising their firm and its services. Their advertising material takes two general forms: informative and inspirational.

There still is a demand for a booklet they issued some years ago containing much valuable information on the care and operation of motors. It begins with a summary of the advantages of electric motor drive for agricultural applications, gives requirements in the selection of a motor, installation suggestions, rewinding and repairing advice, mountings, drives and connections, analyzes possible troubles and includes some tables and conversion figures that are of value.

A novel bit of advertising was carried by means of a piece of cambric, the bottom of which had been dipped in the varnish used in refinishing motors rewound in the shop and the top of which contained a printed message.

Every once in awhile a pertinent thought expressed nicely is reprinted in the form of a blotter or business card; it serves as a reminder of the company and its services. A meter-reading calendar pad, on which was printed pertinent information relative to motors and the firm's telephone number in case of emergency, was described in these columns in a recent issue.

Norton and Norton, Los Angeles motor house, has held down the papers on many a customer's desk by means of this constant reminder shaped like a motor and attractively nickel plated

Advanced Theory and Practice Reviewed by A.I.E.E. at Vancouver Convention

CHALLENGING the attendance records of previous years, 300 delegates met at Hotel Vancouver, Vancouver, B. C., Aug. 30-Sept. 2, for the twenty-first annual A.I.E.E. Pacific Coast Convention. Contributing to the success of the occasion was a well-balanced and timely technical program, diversified entertainment and a representative registration.

In addition to the impressive list of prominent Western engineers who attended the convention were Eastern representatives of the institute, including: H. P. Charlesworth, national president; H. H. Henline, acting secretary; L. B. Chubbuck, vice-president; G. R. Henninger, associate editor of "Electrical Engineering"; and G. I. Wright, Reading Co., Philadelphia, Pa.

Following an address of welcome by W. G. Murrin, president of the British Columbia Electric Railway Co., Ltd., the convention was officially opened by President Charlesworth, who commented on the desirability of holding such periodical meetings. He stated that scientific progress greatly benefits by the mutual exchange of information, the cooperation and assistance between members and the opportunity for enlarged personal contact, offered by annual conventions of professional societies.

In his paper on "The Power System of the British Columbia Power Corp., Ltd.," E. E. Carpenter, consulting engineer for that company, described the geography, climate and main structures of the system in brief detail. Problems encountered in that region are in direct contrast to those described in a subsequent paper by G. C. Sears and A. P. Newberry, on "The Rock Island Development of the Puget Sound Power & Light Co." In the former, hydraulic problems are associated with a rugged topography and a sparse vegetation in many of the water sheds, which predicates a rapid run-off of the heavy precipitation of that area. Glacial action there has carved out many natural reservoirs; these are easily developed and make stream regulation possible to a degree approaching their full economic limit.

In the latter paper, construction problems incident to harnessing the Columbia River were described. Not only were the engineers called upon to divert and bring under control the relatively large normal flow of that stream, but also it was necessary to provide for the extremely heavy flood conditions to which the river is subject. Under extreme conditions the flood is approximately 550,000 sec. ft., and it is interesting to note that flood conditions on the eastern and western slopes of the Cascades occur at different times of the year, making it possible to coordinate two groups of hydroplants to good advantage. (See EWEST, Dec. 1, 1931, p. 292, for a complete description of the Rock Island plant.)

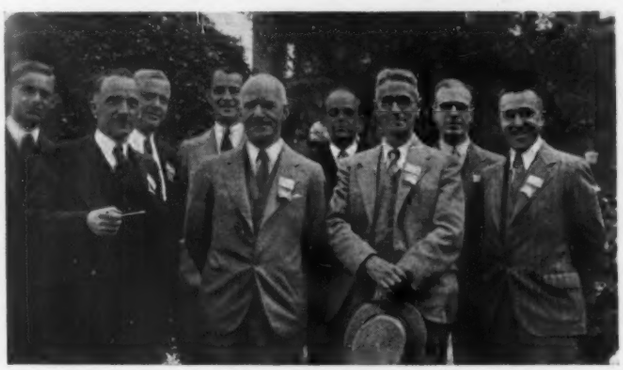
Analyzing the economics of hydro generation in his paper on "The Segregation of Hydro-Electric Power Costs," W. S. McCrea, Jr., Washington State Dept. of Public Works, developed a formula for the total yearly cost per kw.-hr. for any load factor. Methods of evaluating demand costs and energy costs in relation to plant load factor were brought out in the paper by graphical and tabular presentation. Discussion pointed out the need for cost studies and their importance in coordinating generating capacity with system growth, in determining the most economical combinations of steam and hydro power, and in formulating an equitable basis for establishing rates between different classes of consumers.

Transportation, Electrical Machinery and Metering

Describing "The Reading Co.'s Philadelphia Suburban Electrification," G. I. Wright, of that company, covered details of the change-over from steam operation to a 25-cycle, single-phase system. A three-wire distribution system was adopted, with 12,000 volts between trolley and rail, 24,000 volts between rail and feeder and 36,000 volts between feeder and trolley. Equipment for the multiple-unit cars used in this electrification was designed to give extremely fast acceleration and high running speed, each motor car being a complete unit equipped with motors, storage battery, air compressor, cab signals and cab control on each end. Car motors are rated 300 hp. for one hour, with a continuous rating of 240 hp.; this permits an accelerating rate of 1.25 m.p.h./sec. with a car weight of approximately 70 tons. This is the fastest accelerating rate yet obtained on any a.c. equipment and results in a higher schedule of speed in a service where the average length of run is over 0.8 miles.

Illustrative of the sustained horsepower of these motors is the fact that a two-car train has a balancing speed of 56 m.p.h. on a grade of 1.13 per cent, the bal-

Committee members of the Vancouver Section responsible for the success of the convention. In the front row (left to right) are: A. Vilstrup, hotels and registration; G. R. Wright, general convention chairman; J. Teasdale, technical program; C. Arnott. In the rear row (left to right): V. W. M. Fouracre, publicity; F. W. MacNeill, entertainment; W. D. Robertson; J. R. Read, finance; and C. W. Colvin, transportation. Committee Chairmen Cullwick, Mertens and Stacey were not present when this picture was taken



Two delegates from San Francisco: J. S. Moulton and M. C. McKay, of the Pacific Gas and Electric Company

Below—J. W. Robinson, Kerite Cable Co. (left) and "Joe" Hellenthal, Puget Sound Power and Light Co., view Ruskin power house from the top of the dam

G. R. Henninger, associate editor, "Electrical Engineering," (left); Homer S. Atwood, Puget Sound Power & Light Co.; and R. L. Hall, British Columbia Electric Railway Co., Ltd., return from a hard day of divot digging for the Fisken Cup

ancing speed on a level tangent track being between 75 and 80 m.p.h., depending upon the length of the train. With the new equipment, it has been possible to speed schedules 20 per cent and to increase train miles approximately 100 per cent, with an operating cost substantially lower than in the case of steam service in the same territory. Traffic losses have been changed to appreciable increases as a result of the improved service, and discussion of this paper pointed out that this form of modernization by the railroads is an important means of recapturing lost traffic and placing those utilities on a more stable financial basis.

A similar paper by J. B. Cox, General Electric Co., on the electrical operation of the Cascade division of the Great Northern Railway, outlined the economies and improved service resulting from main line electrification. Detailed figures on operating costs, installation costs and savings were included in this paper, which was read by J. F. Spease, of the same company, in the absence of the author.

"The Theory of the Three-Wire D.C. Generator With the Two-Phase Static Balancer" was presented by E. G. Cullwick, assistant professor of electrical engineering, University of British Columbia. By a mathematical analysis, an expression was obtained for the emf. induced in the balancer winding by the alternating flux conditions of the machine. From this it can be shown that cumulative saturation effects may exist in the balancer core, the magnitude of which may result in a maximum flux density in the core far greater than that for which it was designed. Not only does this condition affect the heating of the balancer, due to the large peaks which occur in the magnetizing current, but also it may cause considerable pulsation in the terminal voltage of the system. Conclusions thus made were confirmed by test results and oscillograms taken on an actual machine.

A particularly valuable contribution to operating practice was made by G. R. Shuck, associate professor of electrical engineering, University of Washington, in his paper on "The Metering of Symmetrical Components." The paper described special metering networks which are designed to simultaneously and separately meter the positive and negative sequence components of power and energy. Also included was information relative to the necessary number and location of instrument transformers and a description of certain design features of these networks. Material was presented in great detail and the application of this technique should be of material assistance in the solution of short circuit calculations and should facilitate relay application in stability studies.

Station Apparatus

A. C. Schwager and V. A. Treat, Pacific Electric Mfg. Corp., in their paper, "Shaping of Magnetization Curves and the Zero Error Current Transformer," described an improved core design for instrument transformers. After describing the theory underlying the shaping of magnetization curves to obtain a core of essentially constant a.c. permeability, the practical construction details were illustrated. By means of a relatively small combination reactor, with parts which work at different degrees of high saturation, the proper characteristics can be obtained with a standard bushing transformer core. In addition, the reactor can be mounted with, or remote from, the main core.

This development opens new possibilities for bushing type transformers, as high accuracy can be obtained without the necessity of calibrating instruments connected to each transformer; burdens of 50 volt-amperes can be handled without impairing this accuracy. Installation costs will be benefited because metering and relay circuits may be taken directly from a bushing-type transformer in the circuit breaker.

Trends in substation practice were outlined by M. H. Hobbs, Westinghouse Electric & Mfg. Co., in his paper, "Factory Assemblies for Substation Design." An im-

Four of the five A.I.E.E. national officers who attended. From left to right are: L. B. Chubbuck, vice-president; H. P. Charlesworth, national president; A. W. Copley, vice-president; and H. H. Henline, secretary. Ruskin Dam forms a characteristic background for these leaders of the industry. Absent from the group is Vice-president Higson

portant fact brought out in this paper and in subsequent discussion was the reduction in distribution costs which can be made by using factory-assembled substation units. These units are available for practically every type of service, and the close scrutiny now being given plant costs and engineering economics indicates an increasing trend toward the use of factory-assembled units.

Of timely importance was a paper by R. E. Rowley, Los Angeles Bureau of Power & Light, on "Mechanical Maintenance and Betterments of High-Voltage Oil Circuit Breakers." With the rapid growth of high-voltage transmission systems during the last decade, the operating engineer has been called upon to correlate existing equipment to the demands of heavier loads and more reliable performance. The paper described methods by which a rapidly growing system has met problems encountered in maintaining and rebuilding oil circuit breakers to meet the duties imposed by increased system capacity. Many companies are investigating this means of strengthening power networks at nominal cost, discussion revealed, because the older oil circuit breakers can be rebuilt in the field with factory-assembled contacts which incorporate a circuit-interrupting mechanism of late design.

Power Transmission and Communication

Advancing beyond the accepted limits for high-voltage transmission, J. S. Carroll, professor of electrical engineering, Stanford University, and B. Cozzens, Los Angeles Bureau of Power & Light, contributed to transmission line design data with their paper, "Corona Loss Measurements for the Design of Transmission Lines to Operate at Voltages Between 220 and 330 Kv." Their investigations, made primarily to determine a feasible operating voltage for the future 300-mile transmission line between Hoover Dam and Los Angeles, covered corona loss measurements on the conductors of three different diameters (1.125 in., 1.49 in., and 2.0 in.) at voltages up to 600 kv. Tests included loss measurements on the 1.125-in. cable with various surface conditions obtained by washing, scratch brushing, buffing and dragging the cable for successive tests. Results so far indicate that variations in observed losses are far in excess of that which could be accounted for by a variation in the air density factor. Furthermore, while washing, scratch brushing and polishing the cable temporarily reduces corona losses, aging generally brings the corona losses back to a point equivalent to that of a new, washed cable. Apparently, the most satisfactory results are obtained by properly washing the cable in a solvent and a soap solution, following with a thorough rinsing in water, before erection. The variation in corona loss, as found on new, washed cables, shows that the voltage shift for the same power loss on cables of different sizes is practically proportionate to r log S/r, the factor in E_0 which is varied by the dimensions. In investigating comparative losses on the transposed and untransposed lines, essentially the same loss was shown for either condition. Horizontal spacings proved to have a slightly higher loss than the same length of line with equivalent triangular spacing. Measurements were made with extreme accuracy by means of a water-column resistance watt-meter, described in the paper, which has been developed and perfected at Stanford University. Discussion brought out the desirability of making actual tests for corona losses rather than relying upon empirical formulas. W. D. Peterson, transmission engineer, Los Angeles Bureau of Power & Light, submitted a discussion on this paper, including a tentative formula for corona loss calculation based on the data given.

In their paper, "The Triple Harmonic Circuit in Three-Phase Power Transformer Banks," T. H. Morgan, Worcester Polytechnic Institute, C. A. Bairos and G. S. Kimball, both of Stanford University, presented a practical method of setting up an equivalent circuit to ascertain the effect of triple harmonic voltages and currents in power circuits. Explanation was given to conditions which produce triple frequency resonance with the resultant distortion of the line to neutral voltage if a resonant condition exists. The two remaining papers described the radio plant of R. C. A. Communications, Inc., and the commercial operating experience of radio telephone communications over short distances in British Columbia, where a physical plant economically was impossible.

"Van" Treat, Pacific Electric Mfg. Corp.; G. E. McLean, British Columbia Electric Railway Co., Ltd.; and "Charlie" Cutter and "Gus" Schwager, Pacific Electric Mfg. Corp., pause to "watch the birdie" during their inspection of the switching structure atop Ruskin power house

Student Sessions

Student interest and contributions to the work of the institute have been extremely gratifying to officers and members of Western districts during the past few years. Fostering student activities has been a major effort of the various sections, the results of which were apparent at this convention in the large student attendance and the excellent program of twelve papers prepared and presented by students. This program included the following papers: "Electrical Properties of Hardened Copper," by Armin J. Hill and Homer Lambkin, Mon-

tana State College; "Steam vs. Electric Drive for Sawmill Operation," by Elmer A. Buckhorn, Oregon State College; "Electrical Reflections in Alternating Current Machinery," by D. J. Moore, University of Washington; "Comparison of Two Methods of Calculating a Transmission Line," by Duane Olney and N. A. Miyota, Washington State College; "Effect of Atmospheric Conditions on Corona Loss," by Victor Siegfried, Stanford University; "Short Circuit and Arcing Characteristics of Renewable Link Cartridge Fuses," by Louis Bayha and Oliver Jesson, University of Southern California; "A Stroboscopic Device for Studying Rotary Motion," by Kenneth Nielsen and Wm. S. Nishiyama, University of Utah; "Investigation and Application of the Ultra-short Waves in Radio," by Jos. H. Russell and J. Allan O'Neil, University of Santa Clara; "The Parallel Type Inverter," by Wilson McRae, University of British Columbia; "A Timing Instrument for Transients, Suitable for Measuring Time Lag of Spark-Over," by A. Tilles, University of California; and "The Design of an Efficient Amplifier Coupled to an Antenna," by Sydney Sillitoe, University of Alberta.

Prof. E. G. Cullwick was in charge of student activities at the convention. In addition to their two technical sessions, a luncheon for students and counsellors was held on Tuesday, with a dinner and a student conference at the University of British Columbia on Friday evening as the concluding event of the program.

Entertainment provided as a part of the hospitality of the Vancouver section was as varied and delightful as the recreational facilities of the Northwest. Special entertainment for the ladies included an outing to Stanley Park, where pitch and putt golf, bridge and tea occupied an afternoon, a bridge tea at the Hotel Vancouver, sightseeing tours and individual trips to points of interest. Features of the general entertainment program were a four-hour cruise to Howe Sound, entertainment and dinner being provided aboard ship; the annual golf tournament for the Fisken Cup and other prizes, followed by the annual banquet at the Hotel Vancouver; and inspection trips to the University of British Columbia and to the Ruskin hydro-electric development of the British Columbia Electric Railway Co., Ltd.

Entertainment at the banquet was provided by the B. C. Electric Railway dramatic club, with a skit entitled "The Mayor and the Manicure." At that time, awards for the best papers presented during the past year were conferred and golf prizes given out.

Premier golfers at the convention were J. E. Underhill, British Columbia Electric Railway Co., Ltd., who won the Fisken trophy; G. I. Wright, Reading Co., Philadelphia, and E. G. Cullwick, who won low net and low gross in Flight A, respectively; C. R. Higson, Utah Power & Light Co., and C. K. Haskell, of the British Columbia Telephone Co., Ltd., who won low net in B and C flights, respectively.

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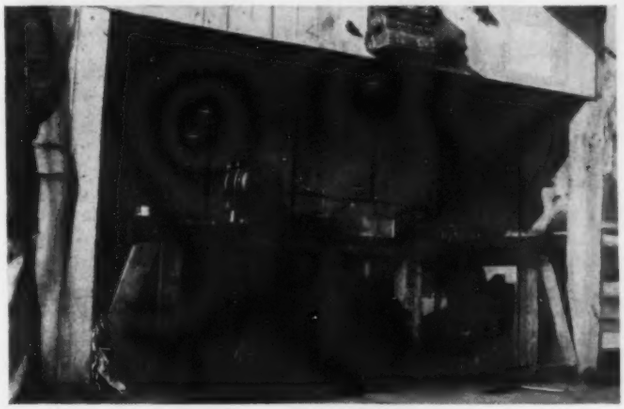
Letters to the Editor

Electric Ferry

Editor, ELECTRICAL WEST:

I was interested in the article, "Electricity Drives an Auto Ferry," by L. O. B. Lindstrom, which appeared in the Motor Forum column of ELECTRICAL WEST for August 1, 1932. I am sure that both Motor Forum and Mr. Lindstrom will be interested to learn that an electrical ferry was in operation on the Pee Dee River, near Blewett Falls, N. C., as far back as 1918. The writer was formerly associated with the Tallassee Power Company, now the Carolina Aluminum Co., in North Carolina, and early in 1919 made an inspection of the ferry, as we thought it might be the solution of a ferry problem with which we were confronted. However, in our instance there were no power lines in the immediate vicinity of the ferry location and we decided to, and did, use the chassis of an old model-T Ford for our power unit. In that particular section of North Carolina, everyone knew how to run a model-T Ford and the maintenance problem presented no particular difficulties, because we simply collected the parts which were shaken off old Fords which were in transit.

Electric drive in the 1918 ferry. First-with-the-latest laurels now belong to North Carolina, not to California



Attached herewith are some pictures of the electrical driven job and also a letter on the ferry company's letter head which gives some indication of the size of the ferry. You will note that the ferry company had some difficulty with cable maintenance. This was because they used a 3-wheel arrangement of driving sheaves, the cable passing over and under and over the sheaves. This reverse-bend arrangement wore out the cables rather rapidly. On the ferry which we installed, we used the common double-sheave elevator cable arrangement and encountered no trouble from cable breakage.

Mr. Lindstrom, no doubt, will be pleased to learn that the electrified Blewett Falls ferry was powered with a General Electric type KT, Form C, 60-cycle, 220-volt, 3-hp., 1,800-r.p.m motor.

J. G. TAYLOR,
Aluminum Co. of America,
Pittsburgh, Pa.

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Errors in an Article

Editor, ELECTRICAL WEST:

While I realize that, in editing, it is your privilege to make such changes as are needed, I wish to call your attention to an ommission and three typographical errors in my recent article ("Meter Studies Can Pay Dividends," Aug. 1 issue).

The following paragraph should have been inserted before the table headed, "Effect of Temperatures on Meter Registration."

"Assume that both elements of the meter have been calibrated to register 100 per cent on loads of unity and all power factors at a temperature of 75 deg. F. Desired to know: The net registration on loads of 1.0, 0.866, 0.707, and 0.50 power factors lagging, at temperatures of 35 and 115 deg. F."

Errors in the table are: Heading "at 75 Deg. F.," which should be "at 115 Deg. F.,"; in the sixth column, line 14 should read -13.4 instead of -3.2; line 28 of the same column should read -1.2 instead of -2.7.

. . . I know you will be interested to know that I have received very complimentary letters from the representatives of the four manufacturers of watthour meters.

Will you send me 25 reprints of the article?

J. P. SURRATT
Salt River Valley Water Users' Assn.
Phoenix, Ariz.

Oregon Utilities Commissioner Rejects Holding-Operating Company Service Fee

PAYMENT by Northwestern Electric Co. of special service fees to Electric Bond & Share Co. was rejected as charges to operating expenses and construction by Oregon Public Utilities Commissioner Thomas in a ruling of Sept. 17. The order, establishing a precedent of incalculable weight, was supplemental to the previous order reducing rates of the Portland utility by 10 per cent. (EWEST, Sept. 1, p.120).

In explaining his ruling on the fees, which were $55,944.06 for 1930 and $54,916.16 for 1931, the commissioner said:

"Supervision fees are justified only when services actually needed have been given, when such services are valuable to the operating company, when the charges represent the actual cost of giving such needed and necessary service, and when the chargs are no more than would have been paid elsewhere.

"There is no evidence in the record that would warrant a finding that any of these four requirements have been met. . . . The Northwestern Electric Co., prior to this contract, was economically and sufficiently managed without the aid of a holding company by substantially the same operating force now in charge, and the commission is not justified in permitting the inclusion of the fees in question as a charge to operating expenses and to construction, upon which rates for service to the public are fixed."

Fee Payments Halted by Thomas

Pointing out that the service charge imposed last January and to be paid by Pacific Northwest Public Service Corp. to Central Public Service Corp., its holding company, had never been approved by the board of directors of the former or submitted to the public utilities commission for its sanction, Oregon Commissioner Thomas ruled that it was "in direct violation of the 1931 laws of Oregon" and entered an order to cancel and expunge all credits under the agreement and to make no further payments until after the contract arrangement has been passed on by the commission.

This order came during a hearing into the financial affairs and relations of the Portland company with its parent. Under the service fee plan now in effect, the Portland utility and its subsidiaries would be required to pay $268,488 annually to the Central Public Service Corp.

Magazine Attacks Rate Cut

Aiming at the afore-mentioned ruling reducing Northwestern Electric Co. rates, the "Oregon Voter," a weekly magazine, in its Sept. 3 issue, comments in an article:

Aiming his ax at the ivy, Judge Thomas threatens mortal injury to the oak. Such is the real significance of his order directing a drastic cut in NW Electric revenues. It is the big utility, Pepco, which will totter if his order is sustained by the courts. Disfigured with scars, stained with its own sap, Pepco has survived twenty years of political chopping; Judge Thomas now finds it is vulnerable through having to accept as its own such rate reductions as he succeeds in imposing on Northwestern. . . Cut butter out of Northwestern's diet and Pepco dies from lack of bread. . .

Aside from the constitutionality issue at stake, there are issues of public decency. It was the Portland public which voted the franchise to Northwestern and thereby assumed responsibility for duplicating distribution plants on the same streets to divide patronage which otherwise would be served by one plant. Later the Portland public voted against merging the two utilities, thereby assuming responsibility for a continuance of this duplication. Now its public officials seek to use this duplication against the victims of public action in forcing the duplication. If there are standards of ethics in public action, they have been set aside ruthlessly by Judge Thomas in his order in its effect of denying to a duplicated plant the return necessary to sustain itself in the face of duplication.

A master of plausibility in political persuasion, Judge Thomas writes his order to appeal to public prejudice and the natural human desire of customers to pay less. He sets up straw men and demolishes them by pages of argumentative array having nothing to do with the points at issue. In disposing of issues, he does so on assumptions unwarranted by evidence and unsupported by experience. In his allocation of capital investment into rate base for Portland, he amputates the bowels of generation from the limbs of distribution.

At that, Judge Thomas, must be given credit for fulfilling the purpose of his appointment. He was installed by the Meier administration to entertain the radicals by tormenting the utilities, and he is giving them a show. The ratepayers and taxpayers will pay for the performance, but that is customary.

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Ross Heads Western Rehabilitation Group

W. A. Ross, vice-president, Columbia Steel Corp., has been named Twelfth Federal Reserve District chairman of the national Committee on Industrial Rehabilitation, it was announced last month. Headquarters for the district are in San Francisco, the territory comprising the Pacific Coast as far east as Salt Lake City.

Appointed with Mr. Ross as vice-chairman is James A. Cranston, Pacific Coast vice-president of General Electric Co., who is assisted by Ray Alvord, San Francisco district manager, General Electric Co., as a member of the general committee.

Chairmen for each of the other larger cities include: J. E. E. Royer, Washington Water Power Co., Spokane; O. B. Coldwell, Portland General Electric Co., Portland; Wallace Fisher, Fisher Flour Mills, Seattle; J. A. H. Kerr, banker, Los Angeles and southern California.

This committee is closely aligned to the "share-a-job" plan organization and is under the national leadership of A. W. Robertson, chairman of the board, Westinghouse Electric & Mfg. Co. It is one of the five groups working under the Central Banking and Industrial

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Spokane Takes Advantage of Its Weather

HOT, dry weather and frequent dust storms in and around Spokane, Wash., furnished the background for a recent educational exhibit of air conditioning equipment in that city. With the public in the right mood because of the weather, Washington Water Power Co. started forming an all-industry committee to work out the show. With the limited funds available, the committee succeeded in arranging attractive displays with real effectiveness. Potential new business was uncovered by the cards-full as the public flocked to the exhibit. Success of the "first" show for Spokane largely is due to Washington Water Power's H. C. Bender, committee's managing-secretary.

Artist's Conception of Proposed San Francisco-Oakland Bridge

Funds to start construction on the San Francisco-Oakland bridge over San Francisco Bay are expected to be advanced shortly by Reconstruction Finance Corp., through the medium of bond purchases. When completed, the bridge will span 5 mi., one of the longest bridges in the world. In its construction will be used 190,000 tons of structural steel and wire and 40,000,000 bd. ft. of lumber

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Committee to rehabilitate industry through various means. Under the present plans, a general survey of manufacturing plants will be made in each city, teams will be formed of prominent industrialists who will meet with the officials of the manufacturing plants and attempt to get them to start needed modernization and expansion work. Not only will this start a flow of money into manufacturing channels, but it will materially lessen unemployment.

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R.F.C. Announces $40,000,000 Aid for Metropolitan Water District, But Suit May Delay Loan

ALTHOUGH Reconstruction Finance Corp. announced on Sept. 13 that it would aid southern California's Metropolitan Water District to finance the construction of the Colorado River aqueduct by purchasing $40,000,000 worth of bonds in two years, a taxpayers' suit filed in the District of Columbia Supreme Court may block an early start on construction.

The suit, filed for three unnamed taxpayers, seeks to enjoin the R. F. C. from carrying out its announced intention, contending that the $220,000,000 aqueduct is not self-liquidating within the meaning of the law and therefore is not eligible for assistance. It also asserts that the project is not necessary at this time, that it will bring increased rates and taxes, and that certain Long Beach citizens are petitioning for the withdrawal of that city from the district. The suit asks that the purchase of the bonds be held up at least until the Long Beach affair is decided.

If no obstruction is encountered, officials of the district expect to start work early in November. The money granted by the R. F. C. will carry the project for about two years, at which time it is expected that the investment market will be in an improved condition and added bonds can be marketed through ordinary channels.

It is estimated that six years will be required to complete the project, depending upon how long it takes to complete the 13-mile San Jacinto tunnel.

Seattle Refused R. F. C. Loan; Plans Bond Issue

Formal notice was given Seattle by Reconstruction Finance Corp. that the latter would not consider the application for a $7,500,000 loan to City Light until all outstanding obligations on the Diablo plant are taken care of. City officials immediately began thinking about a $1,800,000 bond issue to furnish funds to pay off the warrants which have been issued on Diablo during the last year or more for want of immediate cash to meet installments on Skagit contracts already completed and on purchase of machinery and transmission cable for the new Diablo power plant.

An alternative is the acceptance of the Bayly-Hipkins Co. offer (EWEST, March 1, 1932, p. 148) which has been revised downward with certain provisions.

Seattle Occupational Tax Boosted

Seattle's new occupational tax on all public service corporations (EWEST, Aug. 1, et seq.) gained a step in the legal fight when a superior court judge sustained the city's demurrers to suits filed by Puget Sound Power & Light Co., Seattle Gas Co. and Pacific Telephone & Telegraph Co., in which they attacked the legality of the tax.

After intimating that he understood the city had agreed not to try to collect the tax until the question of legality had been determined, the judge added:

"I admit I have been greatly impressed with the thought that this power makes the city 'prosecutor, judge and executioner.' I would feel no great hesitancy in declaring this ordinance an unreasonable exercise of power by the city over its competitors were it not for the provision that the city obligates the municipal plant to pay from the light fund into the city general fund 3 per cent of its gross revenues."

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CALIFORNIA'S Supreme Court has reversed the decision of the California District Court of Appeals in the case of Garret v. Swanton, holding that the contract made by the City of Santa Cruz for construction of a water plant and power house, to be paid for solely from the revenue to be derived, violated the California constitution.

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Edison Makes Power Offer to L. A. Bureau

While Superior Judge Hahn has under advisement his decision in the demurrer and answer of the Los Angeles Bureau of Power & Light to the suit of Southern California Edison Co. to enjoin the bureau from constructing a $7,000,000 steam plant at Wilmington (EWEST, Sept. 1, p.120), the Los Angeles city council is studying the Edison company's offer to turn over to the city the company's 9 per cent share of the power to be generated at Hoover Dam.

The offer was made in an answer to a city council charge that the private utility was attempting to "gobble up" the electric energy to be generated at the dam power plant, and that for that reason the steam plant was necessary to supply the bureau's prospective market for power. The only limit to the offer is that it must be accepted by Oct. 3.

All that the Edison company asks is that it be released from paying for the power, Executive Vice-President W. C. Mullendore asserts.

Dry-Ice Plant Will Use Refuse Edison Gas

Ground will be broken within 60 days for a $300,000 dry-ice plant next to Southern California Edison's Long Beach steam plant, officials of Pacific Carbonic Ice Co. announced last month. The 1,000 tons of refuse gas exhausted daily by the utility's steam plant under minimum operation will produce 100 tons of carbon dioxide for the ice company operations and will increase Edison revenues by $40,000 annually, C. A. Winder, general manager of the ice company, estimates.

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CORRECTION—In an item in the last issue of ELECTRICAL WEST, it was reported incorrectly that Graybar Electric Co. and Western Electric Co. must pay $15,000 in damages to a Tacoma housewife. The companies won the suit, need pay nothing.

Fort Collins, Colo., Votes Municipal Power

Fort Collins, Colo, last month voted into being a charter amendment which will enable the community to build its own power and electric light plant. The amendment allocates $745,00 in revenue bonds for the purpose.

Taxpayers balloted on the proposition without committing themselves to any definite plan of proceedure. The measure simply commands the city council, which recently rejected a municipal ownership proposal, to build the central station at a price not exceeding the amount of bond issue authorized.

In taking this action, Fort Collins followed the example of Englewood, Colo., which on Sept. 12, voted favorably for municipal ownership of its light and water plants. At Englewood, however, the election validated a contract entered into by the city council with the Municipal Power Development Co., Minneapolis, Minn., calling for construction of water and power plants at a cost of $600,000. This enterprise is held up by a temporary federal injunction obtained by the Colorado Central Power Co., which holds a long-time franchise to supply the community with electricity.

Public Service Co. of Colorado is affected by both projects: It wholesales to the Colorado Central at Englewood and at Fort Collins supplies its customers direct.

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San Joaquin Company To Lower Power Rates

Lower rates for winter irrigation have been proposed by San Joaquin Light & Power Corp., effective from Oct. 15 to April 1, 1933. The rates would be lower in that the demand charge would be eliminated.

The company's application, filed with California's railroad commission, declares that the reduction is proposed "with the view of encouraging and assisting agriculturists to operate their pumping plants during the coming winter months for the fortification of vines or trees for healthful production in 1933."

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Oregon's Tillamook Utility District Off

Oregon's hydro-electric commission is without proper legal authority to proclaim the official formation of the Tillamook public utility district (EWEST, Sept. 1, p. 119), the state attorney-general held in an opinion written for the commission. Grounds are that two voting precincts declined to lend approval to the project.

This virtually invalidates the results of the election just held to create the district. According to the opinion, no such district can be formed unless each and every municipality and parcel of territory included in the project votes favorably for district creation. Thus, Tillamook utility district is off until further elections are held.

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Roosevelt Defines Power Stand in Portland Speech

Gov. Franklin D. Roosevelt, speaking in Portland, Ore., on Sept. 21, submitted an eight-plank power platform in his campaign for the presidency. In effect, he proposes deep federal regulation of both operating and holding companies, advocating:

1. Full publicity as to all capital issues of stocks, bonds and other securities; liabilities and indebtedness; capital investment; and frequent information as to gross and net earnings.

2. Publicity on stock ownership of stocks and bonds and other securities, including the stock and other interests of all officers and directors.

3. Publicity with respect to all intercompany contracts and service and interchange of power.

4. Regulation and control of holding companies by Federal Power Commission and the same publicity with regard to such holding companies as provided for operating companies.

5. Cooperation of the Federal Power Commission with public utility commissions of the several states, obtaining information and data pertaining to the regulation and control of such public utilities.

6. Regulation and control of the issue of stocks and bonds and other securities on the principle of prudent investment only.

7. Abolishing by law the reproduction cost theory for rate making and establishing in place of it the actual money, prudent-investment principle as the basis for rate making.

8. Legislation making it a crime to publish or circulate false or deceptive matter relating to public utilities.

Municipal Power System Urged for Portland

After long delays, a firm of rate experts last month submitted to the Portland city council their municipal power report, recommending the acquisition of part of Northwestern Electric Co. for $11,847,456 and a development of Bear Creek for $1,009,000, a total municipal power development of $12,956,456. The report said that in view of the developments planned on Columbia River, by the Federal government, too much money should not be invested in a generating plant.

An effort of two city commissioners to submit the proposal immediately to the people in the form of a $15,000,000 bond issue to be voted upon in November met with defeat.

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Pacific Lighting Adopts Pension Plan

Officials of Los Angeles Gas & Electric Corp. and three Southern California gas companies, subsidiaries of Pacific Lighting Corp., last month announced the adoption of an employee pension plan, affecting 6,200 employees of the four companies.

The pension feature provides for the retirement of women at 60, men at 65. It also calls for participation in the cost by employees to the extent of 3 per cent of their monthly salaries; this is matched by larger contributions by

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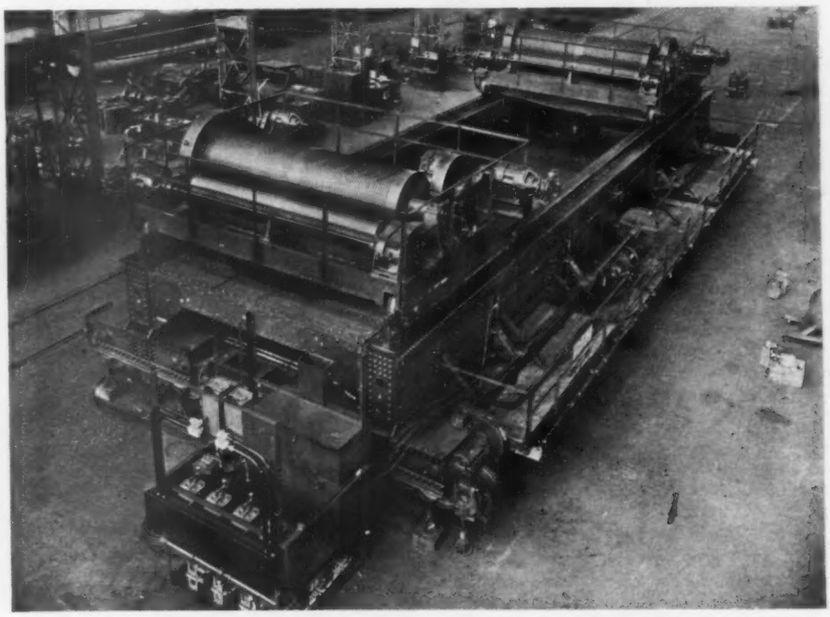
Largest Crane Goes to Diablo Dam



Pictured just before shipment from the Milwaukee plant of Harnischfeger Corp. to Diablo Dam, project of Seattle City Light on Skagit River, this 300-ton, two-trolley travelling crane, the largest power house crane ever built, will be used in erecting and repairing the 83,000-hp. hydro plant at the dam. Besides the 300-ton main hoist, there is a 25-ton auxiliary hoist; it has a 65-ft. lift, a 60-ft. 6-in. span, and a spread of 16 ft. The seven motors are 40 hp. for the main and auxiliary hoists, 60 hp. for bridge operation and 15 hp. for the trolley hoist. It is operated on 3-phase, 220-volt, 60-cycle power

the companies. Under the plan, the average disability payment will be $75 monthly, the minimum pension $45 monthly, the average life insurance $2,500.

News Shorts

¶ COURSES in air conditioning and refrigeration will be offered in Oakland, Calif., by Polytechnic College of Engineering, beginning Oct. 3.

¶ PROF. BEN D. MOSES again will be in charge of the annual rural electrification short course of the College of Agriculture, Davis, Calif., to be given this year on Dec. 12, 13, 14.

¶ RECONSTRUCTION FINANCE CORP. has been asked for a loan of $23 millions for immediate construction of the irrigation dam and power plant of the Verde River irrigation and power project, north of Phoenix, Ariz.

¶ C. J. CALL, Pocatello, Idaho, asks Federal Power Commission permission to install a $30,000 hydro-electric plant on Swift River, to serve Afton, Wyo., and surrounding country with electric energy.

¶ UTILITIES COMPANIES, INC., San Francisco, has proposed to Grants Pass, Ore., and Sierra Madre, Calif., that the company supply each with a municipal diesel-electric plant, take income bonds in payment.

Meetings

Frankness Pervades Rocky Mountain Meet

DELEGATES to the thirteenth annual Rocky Mountain Division, N.E.L.A., convention at Estes Park, Colo., Sept. 12, 13 and 14, inventoried the electrical industry with satisfying thoroughness, and then offered constructive ideas to eliminate factors that retard progress.

Encroachment of municipal ownership into the electric utility field, merchandising and engineering problems, public relations, rates and other vital subjects were attacked enthusiastically, frankly and intelligently.

Municipal ownership was regarded by various speakers as a hazard, not because of the competitive phase, but because of some of the more irresponsible promoters who foster these projects with extravagant propaganda which reacts unfavorably on the electrical industry.

A feature of the conference was the teletype conversation between George B. Cortelyou, N.E.L.A. president, in New York, with Rocky Mountain division officials. This was made possible through courtesy of the Mountain States T. & T. Co., which installed a teletype machine in the convention hall at Estes Park; another was placed at the disposal of Mr. Cortelyou in the eastern city, where the Golden Jubilee of the electrical industry was being celebrated. This interchange of greetings is believed to be unique in N.E.L.A. annals.

Attendance at the convention was approximately normal. Conservative optimism pervaded the gathering and this note was accented when it became apparent that there was harmony on vital issues looking toward recovery of the industry.

President W. W. Nielsen, who assumed his duties on July 1, in his opening speech observed that users of electricity generally had shown no dissatisfaction with rates and service, but that opportunists and politicians had taken advantage of disturbed economic conditions to promote ill-advised and badly-engineered central stations in many communities. He urged close attention to public relationships on the part of electric utilities as a defense against this and other types of promotional schemes.

FRED NORCROSS
Rocky Mountain Division president-elect

Herbert B. Dwight, engineer for the Colorado Public Utilities Commission, strongly recommended that utilities simplify their rates in such manner that the average housewife or layman can understand them. His paper: "Rates—Are Public Utilities Keeping Step With the Present Economic Trend?" pointed out that complex schedules have much to do with the public suspicion of utility procedure. He predicted that if central station executives do not take steps in this direction, the public utilities commission will.

E. Kieth Hartzell, general advertising manager of the Lake Erie Power and Light Co., Sandusky, Ohio, spoke on "An Appeal to Reason—And Revenue." The gist of his appeal was for a strengthening of lines of communication between utilities and their customer-public. Liberal advertising and general publicity budgets are more important now than ever before, he said, declaring for an honest exposition of company poficies, objectives and policies through newspapers and other well-chosen channels.

Past-President John E. Loiseau referred to the domestic electric load as "the hub around which the electric industry revolves." His subject, "Lessons Learned," reviewed conditions since 1929 and cited that increased household consumption of electricity had been a national "life saver" for the industry. He stressed the fact that, despite progress in building domestic load, the average annual per capita domestic bill for electricity is only one-third the per capita cost of tobacco—and far below the average expenditure for candy, ice cream and magazines.

The address of John Valentine, Boulder, Colo., hardware merchant and official of the Rocky Mountain Hardware Dealers' Assn., called an electrical merchandising spade by its correct name, and told how such cards should be played. He walked rough-shod over some of the utility commercial policies, and made his audience like it, by good-natured sallies that balanced stern, homely advice with roars of laughter. He forecasted that utilities and dealers will jointly handle the merchandising of electrical appliances instead of "brandishing knives and making faces at one another." Such a policy, he stated, would be profitable to all parties concerned.

A. H. Heitzler, Public Service Company of Colorado, advocated "fighting fire with fire" by the use of portable, oil-burning, electric-generating equipment. Through this procedure, he pointed out, large utilities can supplement plant facilities at any given point without oppressive capital investment, thus being able to serve, at low rates, isolated commercial and industrial customers who might otherwise build their own stations.

At the final business meeting of the convention, Fred Norcross, manager of the Home Gas & Electric Co., Greeley, Colo., was chosen president-elect for the fiscal year beginning July 1, 1933. G. B. Buck was re-elected a vice-president. Two new vice-presidents were named: J. J. Withrow, Sheridan County Electric Co., Sheridan, Wyo., and K. W. Kissick, Deming Ice & Electric Co., Deming, New Mexico.

A. L. Jones, General Electric Co., Denver, and A. C. Cornell Graybar Electric Co., Denver, were elected to the executive committee. They will head, respectively, the committees on manufacturers' and wholesalers' memberships. Mr. Cornell was elected treasurer, succeeding himself in that position.

George E. Lewis was re-elected secretary-managing director.

Coming Events

Association of Electragists International—Annual convention, Kansas City, Mo., Oct. 10-12, 1932.

National Electric Light Association—

Pacific Coast Electric Association—Engineering Section meeting, San Francisco, Oct. 19-21, 1932.

Commercial Section meeting, Oct. 6-7, Hotel St. Francisco, San Francisco.

Advertising and Publicity Section meeting, San Diego, Calif., Oct. 19, 1932.

Lighting Conference Programs Announced

Programs for the two Pacific Coast lighting schools have been released by the Lighting Bureau of the P.C.E.A. Commercial Section, under whose auspices the conferences will be held. At the same time this issue went to press, the program for the Los Angeles conference was tentative and not complete for publication, but it follows closely the program for the San Francisco meeting, with sessions in the afternoons and evenings of Oct. 24, 25, 26 and 27. Chief difference in the programs lies in the omission, at Los Angeles, of the working of problems, which will be a part of the San Francisco sessions.

Lecturers include three widely-known authorities: S. G. Hibben, Westinghouse Lamp Co., Bloomfield, N. J.; A. L. Powell, Nela Park engineering department, Cleveland; and Helen G. McKinlay, also of Nela Park.

The San Francisco program follows:

Monday, Oct. 17

Morning—
1. Application of lighting fundamentals to sales.
2. New incandescent lamp developments and accessories.
3. Proper and improper field test methods.

Afternoon—
Working problems and discussion.

Evening—
1. Wiring for the present and future.
2. Effect of under-voltage on illumination.

Tuesday, Oct. 18

Morning—
1. Advanced architectural lighting.
2. Custom-built lighting.
3. Color: Its production and use.

Afternoon—
Working problems and discussion.

Evening—
1. 1932 European developments.
2. Present status of gaseous conductor sources.
3. Lighting for the Chicago World Fair.

Wednesday, Oct. 19

Morning—
1. Electrical advertising, 1933 standards.
2. Sales aspects and engineering fundamentals of commercial lighting.
3. Sales aspects and engineering fundamentals of industrial lighting.

Evening—
1. How to buy and maintain profitable lighting.
2. Field testing methods.
3. Coordination of light and architecture.

Thursday, Oct. 20

Morning—
1. How should printed foot-candle standards, as recommended in bulletins, be revised for 1933?
2. Sports lighting.
3. Amateur theatricals.
4. Summary and resume.

Afternoon—
1. "The Challenge" — potentialities of the home lighting market.
2. Home lighting recipes (slides).
3. Luminous harmony for decoration in the home.
4. New and unusual applications of electricity in the home—ultra violet.

Evening—
1. Lighting the garden and exterior of the home.
2. Spectacular outdoor lighting for special occasions.

Friday, Oct. 24

Morning—
1. Wiring the home—specifications and problems.

Afternoon—
1. Home lighting, 1932 style.
2. Elements of a good lighting fixture.
3. What the woman can do in making her own lighting equipment (lamp shades, party decorations, etc.).

Evening—
1. Open house at Stanford University; demonstration of precision equipment of the illumination measurements laboratory.

Personals

Verne Moon Goes to Chicago Utility

VERNE H. Moon, sales manager, Pacific Power & Light Co., Portland, has resigned that position to assume the post of commercial manager of Middle West Utilities Co., Chicago, a major Insull holding company. Details of the change could not be obtained in time for this issue, but officials of the Pacific company intimated that Mr. Moon's former position would not be filled immediately; Guy E. Davis, assistant merchandise manager, will continue to carry out the development program originated by Mr. Moon and reported in EWEST, May 1, 1932, issue.

VERNE H. MOON

Born in Minnesota 39 years ago, Verne Moon early went to work for H. M. Byllesby & Co., leaving in 1914 to enter the University of California. On his discharge from the army in 1919, he entered the employ of Pacific Power & Light Co., where he rose from meter tester to district manager. In Aug., 1922, he was called to Portland to direct and supervise the appliance selling activities of his company. He was advanced to sales manager on the first day of 1931. The success of his guidance of the commercial development of his company is attested to by his advancement to the position of executive of one of the nation's largest utility groups.

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George C. Ward Heads Edison Company

GEORGE C. WARD, senior vice-president, will direct the business of Southern California Edison Co., Ltd., with the advice and counsel of the executive committee, the company's board of directors announced last month. No president will be named immediately to succeed R. H. Ballard, who died in August.

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J. W. JOURDAN, chief designing engineer, San Joaquin Light & Power Corp., Fresno, Calif., has accepted the position of assistant professor of civil engineering at the New Mexico State College of Agriculture and Mechanical Arts, Mesilla Park, N.M.

Allen Babcock Retires After 30 Years' Service

ALLEN H. BABCOCK, consulting electrical engineer, Southern Pacific Co., retired on Sept. 1, after 30 years of continuous service in the same organization.

Mr. Babcock was born in Buffalo, N. Y., in 1865; his training was secured at the University of California and later at Lehigh University, where he majored in chemistry and metallurgy, before electrical engineering was taught. In 1891 he came to San Francisco and entered the employ of the Thomson-Houston Electric Co. as draftsman. For six years he was assistant engineer in street railway work with the General Electric Co., after which he entered the then-undeveloped field of electrical power transmission as engineer and, later, as superintendent for the Standard Electric Co. of California. During 1901 and 1902 he was electrical engineer with the California Central Gas & Electric Co. In these positions he pioneered in the design and construction of the first power transmission lines of northern California and gained experience which enabled him to contribute much to the important railroad electrification he was to undertake later.

In 1902 he entered the railway field as electrical engineer for the North Shore road and laid out the first steam line electrification project of the West Coast. When this was finished, he was made electrical engineer of the Southern Pacific system and, later, of all the Harriman lines, comprising the rail network from New Orleans and Omaha to the Pacific and from Spokane to Mexico City. Since that time he has had responsibility for every electrical project of the Southern Pacific.

In 1924 he was Principal Delegate to the Inter-American Commission on Electrical Communications, held in Mexico. As a result of this conference and subsequent discussion with naval officers, he was commissioned for special service in demonstrating the application of short-wave radio transmission to naval communications. He went with the fleet on the 1925 Australian cruise, and, as the result of his work at that time, the navy immediately adapted its communication service to the use of short waves.

Because of an intense interest in all new developments pertaining to electricity, Mr. Babcock has found time for many scientific activities in addition to his professional duties. He is a member of the American Association for the Advancement of Science and of the Astronomical Society of the Pacific. He is a charter member and a past president of the San Francisco Engineers' Club, a fellow of the American Institute of Electrical Engineers and an honorary member of La Sociedad de Geografia Y. Estadistica.

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JAMES M. BARRY, formerly with the Department of Electricity, San Francisco, has been named executive vice-president and general manager of Alabama Power Co., with headquarters at Birmingham.

GEORGE S. CAMPBELL

H. P. CHARLESWORTH

STANLEY W. GUTHRIE

W. D. Shannon Forms Own Engineering Company

W D. SHANNON, for many years Pacific Coast general superintendent for Stone & Webster Engineering Corp., together with four former Stone & Webster associates, has organized the Shannon Engineering Co., with offices in the Henry Bldg., Seattle. The firm will engage in a general engineering practice in the industrial, hydraulic, structural, mechanical and electrical fields.

Mr. Shannon is widely known on the Pacific Coast from his connection with some of the principal hydro developments, starting with the Caribou plant of the Great Western Power Co. and culminating in the Rock Island project of Puget Sound Power & Light Co.

W. L. Richarson, one of the associates in the new venture, is a structural engineer who did much of the structural designing in connection with power plants built on the Pacific Coast by Stone & Webster. Of the remaining members of the firm, W. K. Sanders was for a number of years a mechanical engineer, O. P. Seim was structural engineering assistant to Mr. Richarson, and O. A. Demuth was an electrical engineer, all with Stone & Webster.

Mr. Shannon also is a vice-president and director of Wilmot, Reynolds & Lamb, an engineering management company organized by former Stone and Webster men.

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Campbell Succeeds Tickner As Pasadena Manager

GEORGE S. CAMPBELL, assistant superintendent of gas distribution for the Los Angeles Gas and Electric Corp. in the Pasadena and Alhambra districts, has been named to take over the duties of J. F. Tickner, who retired Sept. 1 as manager of the Pasadena district office of the corporation. In his new capacity, Mr. Campbell will be in charge of both the commercial and distribution activities for the Pasadena district and will retain supervision over the distribution work in the Alhambra district. The appointment, announced by Addison B. Day, president and general manager of the corporation, comes as an advancement for Mr. Campbell in recognition of 29 years of service with the company.

A.I.E.E. Leader Visits Western Sections

H P. CHARLESWORTH, newly-elected national president of the American Institute of Electrical Engineers, spent the past month as the guest of local sections in the Far West. He attended and spoke at the institute convention in Vancouver, B. C., leaving immediately for a tour of the principal cities in the West, to confer with the different section officers about the plans for the coming year.

Past activity has made Mr. Charlesworth a well-known figure, both in the electrical industry and in the institute which he heads. He is vice-president of Bell Telephone Laboratories, New York, and has made many valuable contributions in the fields of communication and electrical engineering.

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Thies Renamed Seattle Electric Club Head

At its annual election on Sept. 12, the Electric Club of Seattle re-elected W. A. Thies, Pacific Telephone & Telegraph Co., president. A. L. Pollard, Puget Sound Power & Light Co., was named vice-president. Treasurer Norman L. Bost, National Electrical Products Corp., and Secretary Charles W. Allison, Puget Sound Power & Light Co., both were re-elected.

On the board of trustees will be: S. H. Harrison, Westinghouse Electric & Mfg. Co.; N. R. O'Farrell, General Electric Co.; M. P. Hotelling, Seattle Building Department; R. E. Thatcher, Puget Sound Power & Light Co.; and Grover C. Burke, City Electric & Fixture Co.

Plans now are under way for a code school to be conducted by the organization during the early winter months.

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HARRY L. MASSER, vice-president and executive engineer, Los Angeles Gas and Electric Corp., has been elected president of the Pacific Coast Gas Assn. Mr. Masser recently retired as president of the Los Angeles Electric Club.

PAUL D. HOWSE, president of Electrical Products Corp. and vice-president of Pineau & Howse Stage Lighting Co., has been appointed police commissioner of Los Angeles.

Guthrie Named Director of L.A. Gas and Electric

STANLEY W. GUTHRIE, of the legal firm of Guthrie and Darling, was elected a director of Los Angeles Gas and Electric Corp., to fill an existing vacancy, at a special meeting of the board just held.

Mr. Guthrie, while a native of Pennsylvania, came to Los Angeles at the age of three months, and has resided there ever since. Graduating from Stanford University in 1913, he became a member of the legal department of Los Angeles Gas and Electric Corp. in June of that year. On January 1, 1924, he was made assistant general counsel for the utility company, resigning from that position in March, 1929, to enter private legal practice.

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J. J. LOFTUS has been appointed superintendent of Bureau of Reclamation's new $445,000 power plant near Prosser, it was announced by J. S. Moore, district superintendent of the reclamation service office in Yakima, Wash. Mr. Loftus formerly worked on the construction of the plant and the rehabilitation of the Kennewick highlands, for which it will furnish water. The plant went into operation Sept. 1.

Obituary

GEORGE D. HOFFMAN, president of Hoffman Specialty Co. of California, Ltd., and Hoffman Specialty Co., Inc., Waterbury, Conn., died of a heart attack on Sept. 5 at his Pasadena, Calif., home. He was born in Chicago 77 years ago, and while still a young man invented the vacuum radiator valve which bears his name. In 1926 he became interested in electric heaters, founding the California company, manufacturers of Thermador heaters, in 1930. He was a member of the American Society of Heating Engineers and of various social clubs.

HAROLD T. SIMMONS, for 20 years a member of the Graybar Electric Co. organization and sales manager of the company's Los Angeles office for the past seven years, died suddenly on Aug. 31. He was 37 years of age. Mr. Simmons joined the company in 1912 in San Francisco, starting in a clerical position. After service in various capacities, he was transferred in 1921 to the Los Angeles office as stores manager; he became sales manager in October, 1925. Mr. Simmons participated actively in the affairs of the industry in southern California and was a prominent member of the Los Angeles Electric Club.

MELVIN I. REED, rate and electrical engineer for Loveland Engineers, Inc., San Francisco, died on Aug. 28 of self-administered poison gas in a Phoenix, Ariz., hotel. He had been working with the receiver for Arizona Edison Co. for several months.

Contractor Dealer Inspector

Southwest Inspectors Petition Underwriters

FROM a breakfast informal session, a new feature of the Southwestern Section, International Association of Electrical Inspectors convention, at Santa Barbara, Sept. 12-14, 1932, sprang one of the convention's most important motions, the sending of a resolution to the Underwriters Laboratories, Inc., requesting a positive identification of each and every article, no matter how large or small, so that ready field recognition of standard materials will be possible. This came as a result of a general discussion on the subject, in which it was evident that inspectors, wiremen, contractors and suppliers all were confused as to the recognition of listed materials and devices once removed from the package.

The resolution passed, was addressed to the Underwriters Laboratories, but directed to the attention of all branches of the industry. It began with an appreciation of the improvements in the services rendered by the laboratories in the identification of listed materials, particularly the recent decision to provide a label for materials and devices on re-examination service, formerly only listed by type and catalogue number. Then came a summary of the difficulties encountered in field practice in determining whether materials or devices are Underwriters-listed and the consequent permission (in ignorance) of widespread use of non-standard or unlisted devices.

Frank Short, president of the Southwestern section, in his opening address cited the difficulties which the economic condition of the nation has placed upon the inspector and the evils resulting from the public's present price complex, which finds expression in the substitution of inferior and often unsafe materials and equipment for standard and tested.

Herbert Ufer, Underwriters Laboratories, Inc., in the place of R. H. Manahan, who was absent, responded to the welcome from the city clerk of Santa Barbara, telling briefly of the purposes of the organization as being devoted to eliminating the hazards which cause the 4 per cent of national losses of life due to electrical causes. "Cities may well feel repaid for whatever expense they are placed to in the maintenance of electrical inspection, if this can be done," he concluded.

F. D. Weber, president of the I. A. E. I., gave a comprehensive and well-advised talk on the entire range of inspection, parts of which will be published in a future issue of ELECTRICAL WEST. A particularly strong point made was that enforcement of the code is nullified if the electrical industry does not give it full support. If there is quarrel within the industry, the public cannot be expected to pay any attention to its codes.

H. H. Douglas, Southern California Edison Co., and Mr. Ufer reported for the committee studying demand factors in apartment houses electrically heated. The studies reported upon indicated that the demand factors previously established and published by the Pacific Board of Fire Underwriters were adequate. Asked if these factors were to be submitted to the Electrical Committee, N. F. P. A., for inclusion in the next revised code, the consensus was that other sections should first make similar studies so that results in other climates might be taken into consideration. Roy Cowles, P. G. and E. Co., promised that his company's studies of the subject would be made available to the association.

V. H. Tousley, secretary, I. A. E. I., gave an address, "One Code," in which he pointed out the undoubted advantages of standardization of materials and drew from his examples the parallel that standardization of ordinances and codes was even more essential. In Michigan, he stated, a committee studying all the codes and ordinances in the state found 2,000 special rules, which subsequently were reduced to about 40. Similar study, Mr. Tousley was assured by Arthur Veit, Alhambra, was being undertaken in California by a committee.

Frank Short reported on the progress being made by committees both in northern and southern California for the revision of the state safety orders.

H. C. Rice and R. G. Boyles, Southern California Edison Co., presented that company's proposed new sequence meter installation, placed ahead of the main switch. A point was raised as to the weatherproof character of such an installation. After some discussion, President Short was asked to appoint a special committee to study the type of installation proposed and to bring in a report at the next meeting.

On Tuesday morning were shown films of the electrical equipment on a modern electrically-propelled liner and the processing of copper from mine to consumer. Tuesday afternoon's session was opened by the reading of a paper prepared by the wiring sales committee of the N. E. L. A.; it described the work of joint committee representing all groups in the industry for the formulation of adequacy standards for residential wiring. It asked the assistance of the electrical inspectors in the great industry job of acquainting the public with adequate wiring. W. A. Cyr, the Pacific Coast member of the committee, read the paper.

Mr. Tousley then described the new standard form for the reporting of electrical fires and accidents, by means of which a complete detailed information may be obtained in a uniform manner in all parts of the country. W. J. Canada, N. E. M. A., pointed out the economic significance of such reports, their value in support of the inspector's position, and the need for such data in the development of the code along lines of real rather than theoretical hazard.

H. V. Dobson, Santa Barbara electrical inspector and host to the convention, provided a splendid entertainment on Monday evening in connection with a dinner dance. The city of Santa Barbara and the chamber of commerce also assisted in providing the novel and appropriate entertainment. W. A. Cyr acted as master of ceremonies and exhibited a parody calculator, built in imitation of a motor installation calculator invented by Mr. Short.

At the election of officers, K. J. Bickel, Martinez electrical inspector, was named president upon the resignation of E. M. McLaughlin, first vice-president, Richmond. A. C. Veit was named first vice-president and C. T. Coyle, Fresno, second vice-president. C. W. Mitchell was re-elected secretary-treasurer; executive committee members chosen were: Past-president Frank Short, Los Angeles; H. M. Beecher, Los Angeles city electrical dept.; H. C. Rice, Southern California Edison Co.; and R. R. Cowles, P. G. and E. Co. C. W. Mitchell and G. E. Kimball were named I. A. E. I. council members. The next convention will be held either at the Chicago World's Fair or at Yosemite.

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A. M. McLean Heads Northwest Inspectors

A. M. McLEAN, deputy electrical inspector, Portland, president; J. F. Fulian, electrical inspector, Wenatchee, first vice-president; M. P. Hotelling, electrical plan examiner, Seattle, second vice-president; and F. D. Weber, electrical engineer, Oregon Insurance Rating Bureau, secretary-treasurer. These will be the officers of the Northwest Section, International Assn. of Electrical Inspectors, for the next year, it was decided by the convention at Wenatchee, Wash., meeting on Sept. 6, 7 and 8.

Opening on Sept. 6, the convention quickly disposed of formalities, swung into business under the guidance of President C. E. Foster, Astoria, Ore. W. L. Baumgartner, assistant corporation counsel, Seattle, spoke first, stress-

After inspecting the golf course, they resolved that they were pretty good. Left to right (top row): Wright Electric Co.'s Wright, Wenatchee, Wash.; G. I. Drennan; L. W. Going; Frank Smallidge; J. J. Agguter. Bottom row: A. M. McLean, winner of the trophy and president-elect of the section; Mr. Downey; Mr. Moon; Norman Bost

ing the need in codes for words with more definite meaning, pointing to such words as "suitable," "approved," "reasonable," and "equivalent" as all too indefinite. If experts cannot agree upon the intent and meaning of certain code provisions, he asked, how can judges and juries of laymen make fair and impartial decisions?

Followed in succession talks by Victor H. Tousley, I.A.E.I. secretary, on the importance of the opportunity of inspectors to sell themselves to the public by acquainting the public with reasons and needs for greater wiring adequacy than that established by minimum code requirements; by L. Lauridsen, Portland General Electric Co., on grounding; and by J. B. Downer, water department, Seattle, on "A Waterworks Man's Viewpoint of Article 9."

What should be the yardstick with which to measure the safety of electrical installations? was a question raised by International President F. D. Weber in his address. Should it be based entirely on economic factors only or should these factors be ignored and the safety of the public be the major consideration? An impartial solution of this question, he contended, will go a long way to allay much of the criticism of the national code. He dwelled on the fact that the inspector should not fear the criticism which sometimes is made to the effect that reasonable adequacy should not be included in the code, pointing to the fact that soon the present standards will fall far short of the higher standards which are sure to come. Details of this talk will be published in a forthcoming issue of ELECTRICAL WEST.

One of the most progressive steps taken by the convention was the adoption of the minority report of the committee on wiring adequacy, which urged the inclusion of rules in the National Electrical Code to supplement the present requirements relating to minimum feeder capacities by providing adequate numbers of branch circuits, based upon the area and occupancy served.

Many phases of code problems were presented through the various article committees and, in most instances, the recommendations made indicated that the inspectors were keeping in step with the trend of times. One of the recommendations provided that where a building is served through more than one meter, the service conductors may be run to any number of service switches without being required to be disconnected by the conventional type of service switch. Another provided that, in case of underground service conductors, an approved bolt bar connection be installed for disconnecting the conductors from their source of supply.

Article 5 committee recommended that conduit be approved without threaded ends, thus placing conduit on a more equitable commercial basis with electrical metallic tubing.

A timely recommendation was that requiring lamp-holding devices, which are designed to be used with gas-filled lamps, to be provided with non-carbonizing insulating material between the lamp holder shell and outer metal shell of the socket or receptacle. Another was to the effect that metal fixtures shall not be installed where they are within reach of continuously damp or conductive floors and surfaces, unless they are effectively grounded in accordance with other provisions.

Many other recommendations were presented to the floor by the many committees on the code, each intended for greater safety and adequacy.

L. W. Going, chief electrical inspector, Portland, lost the golf cup, which he won last year, to A. M. McLean, deputy electrical inspector, Portland, the new president.

Selection of next year's convention city was left to the executive committee; it rests between Chicago, at the world's fair, and Portland.

Group of inspectors to Northwest convention at Puget Sound Power & Light's Rock Island development, near Wenatchee

Electragists Plan Policy-Making Forum

Instead of a program of long speeches, the 32nd Annual Convention of the Association of Electragists, International, to be held at Kansas City, Mo., Oct. 10-12, is to be a national forum of the electrical contracting industry, officers of the association promise.

Working on the theory that most delegates could sit at home and read the printed speeches just as well as listening to them at a convention, the officers have turned the morning and afternoon sessions of the first two days into strictly deliberative forums, open to contractors and dealers only, at which reports, discussions and actions will be presented entirely by the members for policy guidance on all-industry problems. The final session will be an all-industry program, the keynote of which will be "Industry Teamwork."

Salesmanship, new markets, promotional programs, distribution policies and business practices, code and inspection problems, standards and regulations, and similar subjects, together with plans for building stronger national, state and local contractors' associations, will be the topics at the deliberative forums.

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ERIC UNMACK recently moved his store, known as Westwood Electric Co., to 1944 Ocean Ave. and changed its name to Westwood Electric Housewares. Mr. Unmack is a pioneer merchandiser of San Francisco.

MORRISON ELECTRIC Co. of Portland, Oregon, received a contract for installation of wiring for the new police radio station in Portland's Mount Tabor Park.

RICH ELECTRIC Co., formerly located on South Egan Ave., Beaumont, Calif., has moved to a new store at 257 Fifth St. Aluminum decorations both for walls and shelvings were used throughout in the new store.

A. H. FURST, pioneer electrical man of Redlands, Calif., has acquired a half-circle front at 109 Cajon St., Redlands, which faces four streets and allows excellent displays of appliances. An inside feature of the store is an attractive model electric kitchen for conducting cooking demonstrations.

OEHMLER ELECTRIC CO., Denver, Colo., recently moved to 1522 Park Ave., almost opposite its previous location.

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SAN DIEGO ELECTRIC SHOP is the new name adopted by the former Airport Electric Co., of San Diego. Bruno E. Barth and Durlin J. Flagg are the proprietors. The company remains at its former address at 8th Ave. and F St.

BROWN & WEBER Electrical Co., authorized General Electric Home Appliance dealers, have moved to a new location at 30 East Main St., Alhambra, Calif., for the installation of their G. E. store. This firm was formerly at the same location in a building since torn down.

WYLDE ELECTRIC Co., for several years located on Long Beach Blvd., at Lynwood, Calif., recently closed its store and opened a new store in Long Beach, Calif., at 2187 Atlantic Ave.

Manufacturer Distributor

Westinghouse Tries New Super-Wholesaling Plan

Marking a distinct innovation in distribution of electrical appliances, Westinghouse Electric & Manufacturing Co. has undertaken an experiment on the Pacific Coast in the consolidation of all merchandise sales of the company through its wholly-owned wholesaling subsidiary, Westinghouse Electric Supply Co., which will in the future perform a super-wholesaling function. Explaining the new program, W. R. Marshall, Westinghouse commercial vice-president for the Pacific Coast, said that it had been developed for the purpose of increasing volume, reducing sales expense and simplifying the Westinghouse merchandise distribution setup.

To a degree, the new plan follows the national program of consolidating all district merchandise division activities with the district wholesale organizations. The experiment on the Pacific Coast differs from the national plan in that it also involves the metropolitan refrigeration distributors in those sections where this plan is in operation. Refrigeration distributors will enlarge their activities to include (in addition to refrigerators) ranges, washers, ironers and vacuum cleaners, on which they will have more or less exclusive retail distribution in their metropolitan territories.

All Westinghouse merchandise accounts will be sold and serviced by the new super-wholesaling organization, which has absorbed the district merchandise division staffs. One consolidated warehouse stock of Westinghouse appliances will be maintained in each district by the wholesale organization, under the supervision of the Pacific Coast district office of the manufacturing company. Sales responsibility, including sales promotion and all creative merchandising work, will rest with the wholesaler.

Point of contact between the manufacturing company and the wholesale organization, which is headed by F. N. Averill, Portland, will be C. A. Meier, Pacific Coast district merchandise manager, who in turn will report to Mr. Marshall.

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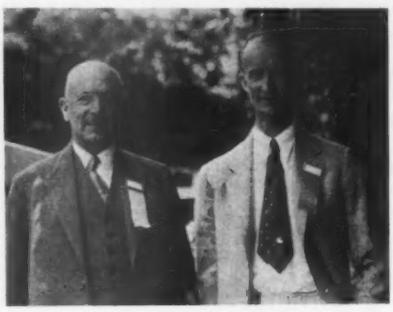
DRENDELL-TRUMBULL Electric Mfg. Co., San Francisco, on Sept. 1 became northern California representatives for A. G. electrical devices, manufactured by The Trumbull Electric Mfg. Co., Pacific Division.

W. H. STEWART, since 1923 vice-president of Bethlehem Steel Export Corp., has been elected president of Pacific Coast Steel Corp., San Francisco, succeeding D. E. McLaughlin, who retired some months ago.

All in Two's

These men are responsible for lots of things which happen in the electrical industry on the Pacific Coast; all came together at the P.C.E.A. convention in Pasadena. Left to right, they are:

Fred Garrison and J. H. Cunningham, central station department, General Electric Co., Los Angeles



John Wrenn, refrigeration and air conditioning specialist, Pacific Gas and Electric Co.; and "Jack" Davidson, California manager, Estate Stove Co.

Tom Supplee, manager, public relations department, and C. C. Lee, Northern California district manager, both of Frigidaire Corp., San Francisco

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H. J. GUTE CO., San Francisco, last month received a shipment of 3,000 toasters from Beardsley & Wolcott Co., Torrington, Conn., believed to be the largest toaster order ever delivered to the Pacific Coast.

FRANK A. HANSEN has announced a new address at 119 So. Edgemont St., Los Angeles. Mr. Hansen is the Pacific Coast manager for the Holophane Co., Inc.

G. E. Supply Gets Ranges, Refrigerators in Montana

General Electric Supply Corp. will distribute G. E. refrigerators and Hotpoint ranges in the Montana territory formerly covered by F. B. Connelly Co., as well as in the newly-acquired Portland, Spokane and Seattle territories, according to an announcement by D. E. Harris, vice-president in charge of Pacific Coast operations. (EWEST, Sept. 1, 1932, p. 127.)

Under the new arrangement in the Northwest, range and refrigerator specialists will be maintained in each division office of the supply corporation. Displays will also be maintained in each district office except Portland, where the new display room and all-electric kitchen, recently installed by the former Laidley Company, will be maintained. In Montana, headquarters will be moved from Billings to Butte, although the Billings warehouse will be continued.

The supply corporation will not engage in any retail operations, but will devote all of its attention to the development of business through dealers and power companies.

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C. G. Crawford Returns To Pelton Company

C. G. CRAWFORD, sales engineer for The Pelton Water Wheel Co., has returned from Philadelphia, where he spent five months at the works of the Baldwin-Southwark Corp. He henceforth will specialize in sales work for products of Baldwin-Southwark and the De La Vergne Engine Co., both being associated with The Pelton Water Wheel Co.

Mr. Crawford is a mechanical engineer of wide experience, having been associated with General Electric Co., in Schenectady, and also the Utica Mining Co., prior to joining the Pelton organization in 1929. He received his early engineering training at Stanford University.

De La Vergne Engine Co. products to be represented by Mr. Crawford consist of diesel engines and refrigerating equipment. Those of the Baldwin-Southwark Corp. include hydraulic presses, bending rolls and all types of testing equipment, as well as special machinery of widely differing types. The hydraulically-operated precision testing machine recently installed at the University of California (EWEST, Sept. 1, 1932, p. 121) was built and tested in the works of Baldwin-Southwark Corp.

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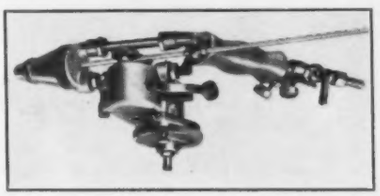
E. O. SHREVE, assistant vice-president of General Electric Co., Schenectady, has been spending several weeks in San Francisco and other key cities of the Pacific Coast, conferring with divisions of his company. Mr. Shreve, formerly manager of the company's San Francisco district, is extremely optimistic about business conditions on the Pacific Coast and in the country generally.

De Laval Pacific Gets Metalspray Distribution

DE LAVAL Pacific Co. has announced exclusive sales and distribution rights for the eleven Western states, Alaska, Hawaii and the Far East for Metalspray, manufactured by the Metal Spray Co., Los Angeles. Metalspray is a process of spraying molten metals on all materials and includes a gun to accomplish this process. The gun consists



Metalspray gun

of an air turbine supplying power through reduction gears to two knurled wheels that feed metal wires into an oxy-acetylene flame. As the flame (6,300 deg. F.) melts the wire, an air blast atomizes and impacts the molten particles upon a surface which previously has been sand-blasted to provide bond. Coatings of any desired thickness may be obtained and any metal may be sprayed which can be secured in wire form. Innumerable uses have been developed in the protective, preventive, decorative, repair, reclaiming and production fields. In the utility field, non-corrosive coatings have been applied to pump casings and runners handling salt water, condenser heads have been coated against salt water corrosion, worn and corroded hydro turbine buckets and runners have been built up, coatings have been put on pipes and equipment exposed to the elements, worn shafts rebuilt and many other possible uses devised. The Metalspray guns are supplied in three sizes, Model 80 handling all metals in 12-gage wires and rods, Model 125 handling all metals in ⅛-in. diameter wires and rods and Model 186S handling 3/16-in. diameter wires and rods in metals melting under 1,300 deg. F.

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CALVIN W. FLEESON, formerly factory representative of Meadows Washing Machine Co., has joined the Stanford Products, Ltd., San Francisco, as northern California representative for the company's new DUOcron clocks.

O. A. (CHICK) ALDERMAN, has been appointed to succeed William Trevethen, resigned, as representative of Bussman Mfg. Co. in the Northwest. Headquarters will remain in Seattle.

ASSOCIATED Wholesale Electric Co., Los Angeles, has been appointed southern California distributor for Columbia radios, C. D. Russell, president of the firm, announced.

H. B. SQUIRES Co., San Francisco, has been named Pacific Coast representative for Colt electrical products. Stocks will be maintained in San Francisco, Los Angeles and Seattle.

HOFFMAN SPECIALTY Co. of California, manufacturers of Thermador electric air heaters, and Everhot Electric & Mfg. Co., makers of Everhot water heaters, have been consolidated into the Thermador Electrical Mfg. Co., 116 Llewellyn St., Los Angeles. There will be no change in management, W. E. Cranston, Jr., vice-president and general manager of the Hoffman company, and H. H. Fogwell, president and manager of the Everhot firm, being active heads of the new company.

JAMES S. MAHAN, sales manager for Electrotrim, Inc., Union City, Ind., visited the Pacific Coast last month to attend the two inspectors' conventions. He also confirmed the appointments of Clarence R. Hunt, San Francisco, as factory representative for northern California, Nevada, Oregon and Washington; and K. B. Slack, Los Angeles, as representative for southern California and Arizona.

HOMER KING, Inc., Tacoma, has been appointed distributor of Kelvinator refrigerators in Tacoma and Seattle and nine surrounding counties in Washington. E. H. Chamberlain will be sales manager of the Kelvinator division.

CENTRAL Tube Co., Pittsburgh, has announced the appointment of Richard R. F. Lehman as southern California and Arizona sales representative.

THOMAS & BETTS Co. are now represented in Denver by James H. Blinn Co.

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Business Looks Good

Typical of the way business is done in California and adjacent territory, the Dollar liner, President Hayes, is shown here unloading 55 carloads of General Electric refrigerators for L. H. Bennett Co., Ltd., San Francisco; Valley Electrical Supply Co., Fresno; and other G. E. refrigerator distributors in the Far West. Ten carloads went to the Bennett company, seven to the Valley company, and the other shipments varied in size

Hotpoint Announces Range Campaign

KNOWN as the "Hughes Cup" tournament, a 15-week sales drive on Hotpoint ranges begun Sept. 1 and to end Dec. 17, has been launched by Edison General Electric Appliance Co., Inc.

Two quotas have been established for each distributor: One, termed the "quantity quota," consists of the total number of ranges each is expected to sell. The other, known as the "quality quota," represent the total degrees which the distributor attains, different degrees being given for different types of ranges.

Arrangements have been made for special terms during the campaign, as well as for payment of installation costs.

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REPUBLIC REFRIGERATOR Co., Detroit, has announced plans to license distributors in strategic cities throughout the country to handle models in the medium price range, soon to be placed on the market. William Pace, of the refrigerator company, declares that a radically new idea in merchandising will be employed, in that distributors will operate assembly plants.

Market Review

California and Intermountain—

IT IS generally asserted that business is better, though, on analysis, this heartened feeling is found to be based on greater retail activity, a greater number and spread of small construction and re-conditioning jobs, the actual billing of such old jobs as the War Memorial in San Francisco, the gradual approach to the bidding stage of such new jobs as Metropolitan Water District of Los Angeles, and better industrial buying, especially in the mines of the Rocky Mountain district.

Contrary factors are the extremly quiet power company purchasing, especially in the northern and central areas, and very low building construction volume. Present building activity shows Los Angeles to be running about 70 per cent below last year, Oakland 60 per cent and San Francisco 45 per cent. For the month of August, for example, San Francisco topped the Oakland and Los Angeles total by about 5 per cent. The number of jobs has decreased only about 20 per cent.

Los Angeles, however, shows some very encouraging prospects. About $120,000 is being spent for paper and lead cable for the municipal underground network system, of which orders aggregating over half already have been placed. Standard weatherproof and rubber-covered sizes are also on requisition.

The Metropolitan Water District of Los Angeles is about 6 weeks away from the order stage, all plans and specifications having been prepared and merely awaiting the payment of $40,000,000 already authorized by the R.F.C.

The first unit covers the 13-mile San Jacinto tunnel and will include approximately $250,000 of insulators and transformers for the temporary construction line.

The Golden Gate bridge is near the bidding stage, the electrical contract being estimated at about $150,000.

Government building is again approaching 1931 intensity, there being about $2,500,000 projected for southern California and $3,500,000 in the Bay area, all for post offices and federal buildings. In addition the navy department is to spend about $1,000,000 for construction and repairs for the Mare Island yard and double that amount for Hawaiian base.

Private building is very dull, and the only outstanding official jobs to break are a $1,000,000 state hospital at Ventura and an $800,000 jail for San Francisco.

Manufacturers report the dullest conditions ever known for staple machinery such as meters, pumping motors and transformers of all sizes. This is due to power company inactivity, for the orders reported cover such industrial items as $4,000 of spare turbine parts for a lumber company in the Eureka district and $1,500 spare parts for a New Mexico mine.

Power company sales departments are very active, concentrating on ranges and small portable heaters. Pacific Gas & Electric Co. expects to promote the sale on about 12,000 heaters, sizes 1,250 to 2,000 watts, in three months beginning Oct. 1, with sales divided about equally between dealers and itself. A unique campaign feature is the timing of advertising and effort in certain areas based upon study of fall weather conditions in those areas for the past 50 years.

Several lighting campaigns are breaking, largely promoted by individual manufacturers and wholesalers. Sports lighting includes a $4,000,000 horse racing plant near Los Angeles, to be completed by 1934, and several new dog racing tracks in the Bay district, each with its large lighting unit and loud speaker installations. This class of prospect looks better than a few weeks back.

Government orders account for $3,500 in street lighting equipment for an army base, a motor-generator set and turbo-generator for lighthouse service and $70,000 in Westinghouse motors and control equipment for Hoover Dam haulage cableways.

Prices are steadier, especially in rigid iron conduit. Rubber-covered wires have increased from 7½ to 10 per cent in price and lead-covered cable has advanced 5 per cent.

Pacific Northwest—

LUMBER prices are going up, causing optimistic predictions that the fall and early winter months will show business increases. Prices are from $1 to $3 higher on lumber; shingle and log prices have increased correspondingly. A slight increase in building projects was noted during the month, but dollar value was not high because the jobs were largely repair and modernization work.

Money appears to be more easily obtainable, which may hasten now-delayed construction projects.

Motors and apparatus, wire, poles and hardware showed no improvement. This was also true of appliances.

Orders for a 1,500- or 2,000-hp. motor and about $40,000 worth of switchboards and control apparatus required on an irrigation project are expected to be placed shortly. This is part of the $600,000 pumping unit No. 2 of the government's Wapato development. A fire alarm system, value about $40,000, is being considered for Yakima, Wash., and definite action is expected to be taken soon.

▼ ▼ ▼

Barometer

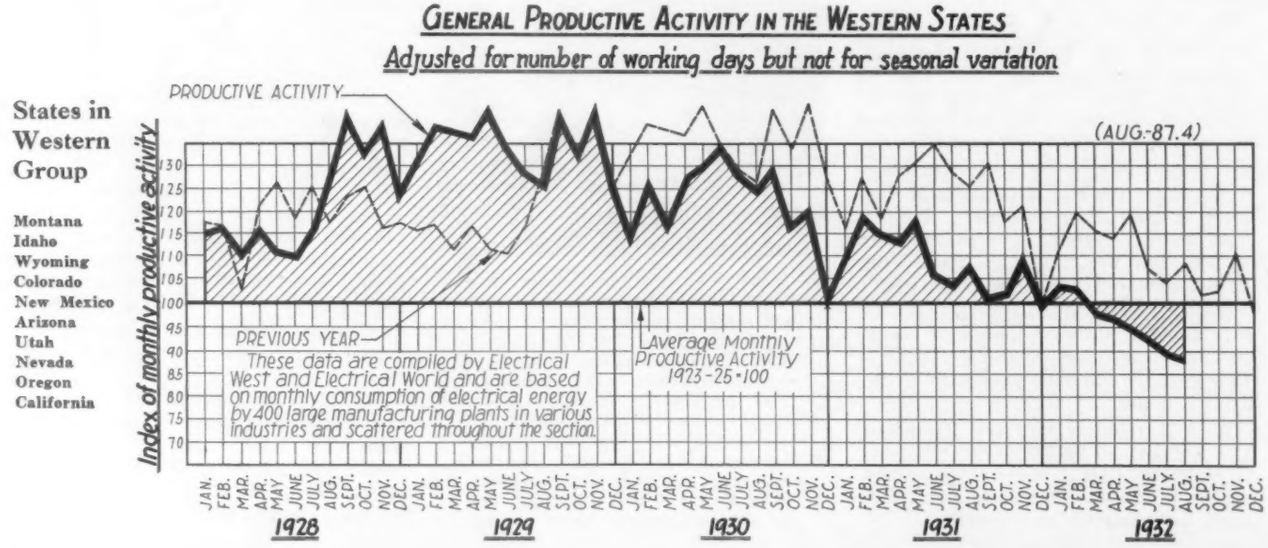
CHANGES generally were slight, the combined index falling 1.6 from July, considerably smaller than the fall for the U. S. as a whole. Rubber moved downward in the West, as elsewhere, but only 5 per cent as against 26 per cent last year. Paper and pulp recovered July losses. Stone, clay and glass improved, indicating increased building; the gain was 9 per cent over July, 20 per cent over June. Present level is down 18 per cent from August, 1931.

Indexes of Manufacturing Activity in the Western States

(All figures adjusted for number of working days)

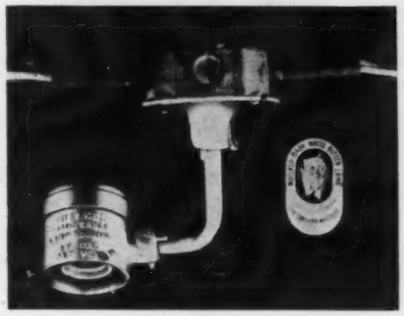
	Aug., 1932	July, 1932	June, 1932	Aug., 1931
All industry	87.4	88.7	91.6	106.5
Chemicals	83.2	88.7	85.5	77.1
Food	111.8	112.5	112.4	155.7
Forest products	104.2	103.8	106.3	129.1
Metals group	29.8	31.7	44.5	43.8
Paper and pulp	127.9	120.0	128.7	125.5*
Rubber	92.8	103.0	132.0	103.1
Shipbuilding	98.0	103.3	105.0	85.2
Stone, clay and glass	86.2	79.3	72.0	99.5

* Revision.



New Products

Lamp Housing

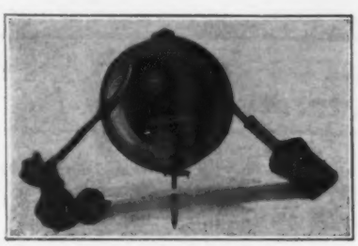


A recent invention of the Wuelker Reflector Lighting Corp., San Francisco, is a grounded adjustable lamp housing, consisting of an adjustable fixture containing the socket and designed to carry any make of reflector. A hollow link, forming a 90 deg. angle, joins the housing, carries supply wires, and is rotatable in every direction up to 360 deg. It is locked in any position by set screws. The housing is Underwriter-approved. Housing equipped with medium or mogul socket; may be attached to outlet box, any type of strip or any size of pipe from ½ to 4 in. The main feature lies in the fact that at no angle is it possible to twist or damage the wires in the link, say the makers.—Electrical West, Oct. 1, 1932.

▼

Roll-A-Way Cord

Trico Fuse Mfg. Co., Milwaukee, is marketing the Junior Roll-A-Way cord, consisting of a spring reel, 10 ft. of heater cord equipped with connectors, and a hollow nail for mounting. Intended retail price, $1.—Electrical West, Oct. 1, 1932.



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Automatic Iron

"Featherweight," a new, 1,000-watt automatic iron, is offered by Fitzgerald Mfg. Co., Torrington, Conn. Among its publicized features are: Weighs less than 4 lbs.; adjustable lever maintains heat from 250-550 deg. F.; fast heating; perfect balance. Made in 115- and 230-volt sizes, a.c. only. Price, 115-volt size, $6.50. —Electrical West, Oct. 1, 1932.

Low-Priced Frigidaire

Frigidaire Corp., Dayton, Ohio, has announced a popular-priced model, S-4, with 4 cu. ft. storage capacity. Substantially the same in design and construction as other models of the line, the small unit makes 30 cubes of ice, has 8.7 sq. ft. of shelf area. Price, $112 plus freight.—Electrical West, Oct. 1, 1932.

▼

Toastmaster With Clock

What is heralded as an outstanding improvement in toasting is the "flexible clock" now being incorporated in Toastmasters, product of Waters Genter Co., Minneapolis. This clock runs slowly when the toaster is cold, faster when it is hot, thus regulating the toasting period. This feature, it is claimed, guarantees uniformity of toasting at all times on all slices. Outside appearance of toaster remains unchanged except for small black enamel line around base. Prices: 1-slice Toastmaster, $11.50; 2-slice Toastmaster, $16.—Electrical West, Oct. 1, 1932.

▼

"Baby" Floodlight

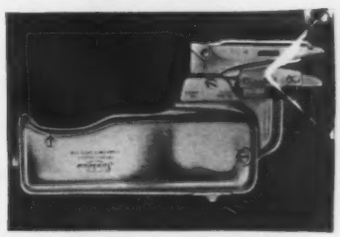
General Electric Co. now is making a "Baby" floodlight with a 6-in. diameter lens, said to be particularly adaptable to lighting signs of oil and sign companies. It can be screwed on a 1½-in. pipe, is designed for use with 150-watt lamp.—Electrical West, Oct. 1, 1932.

DUOkron Clocks

Stanford Products, Ltd., San Francisco, is distributing its patented DUOkron electric clock, with a mechanism which runs the clock for about an hour during current interruptions. Synchronous motor runs at 300 rpm. Three models available: No. 535, as shown; No. 536, same with alarm; No. 545, wall model. Furnished in eight finishes, including sterling silver and gold. List prices, $4.95 (for 535); $5.95 (for 545); and $6.95 (for 536). —Electrical West, Oct. 1, 1932.

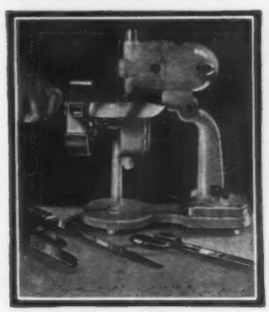
▼

Electric Scissors



Two new products of Chicago Flexible Shaft Co., Chicago, makers of "Sunbeam" appliances, are an electric scissors and a knife sharpener attachment for the Mixmaster. The first is said to cut all kinds of materials, from sheer silks to heavy woolens, doing away with danger of fraying or pulling threads. It retails for $5.

The sharpener consists of a sharpening stone encased in a housing which catches all grit and dust from the operation. A guide keeps the knife in the correct position. Operates from same power unit as other attachments. Price, $2.—Electrical West, Oct. 1, 1932.



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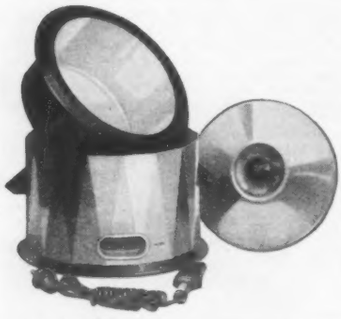
G. E. Humidifier

General Electric Co. has announced the "humifilter," a device which will circulate, filter and properly humidify air in a home without the use of a duct system, using electricity at the same rate as a single incandescent lamp. The device is said to be capable of producing a complete change of air in the lower part of a house in 40 min. A humidistat measures the relative humidity of the air and automatically controls the amount of moisture evaporated.—Electrical West, Oct. 1, 1932.

Electric Casserole



National Enameling & Stamping Co., Inc., Milwaukee, has added to its line a "Thriftycook" casserole with two heats, 425 watts on high, 130 watts on low. Cooking inset, removable for cleaning, is made of stainless steel, porcelain enameled in jet black with white lining so that food does not touch metal. Heating units in side walls. Capacity, 2 quarts. No. B-45, chromium plated, priced at $8.50. No. B-50, in ivory and green enamel, $5.50.—Electrical West, Oct. 1, 1932.

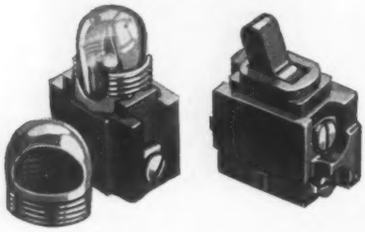
▼

Portable Humidifier

A portable, electric, motorized, fan-circulating humidifier being manufactured by Workrite Specialty Co., Milwaukee, has the appearance of a vase (13½ in. high, 11½ in. diam.) so that it may be used in any home, apartment or office as a decoration. Body has black crystallized finish, base and grille are chromium-plated. Operates off any light socket, with safety device to shut off current when water is evaporated. Heating element rated 660 watts. Price, $24.50.—Electrical West, Oct. 1, 1932.

▼

Wiring Devices



A complete line of wall-plate wiring devices, consisting of 23 unit parts from which the contractor can assemble 59,244 different combinations, is announced by Pass & Seymour, Inc., Syracuse, N. Y. It is known as the P&S-Despard line. The manufacturers claim that additional convenience and more outlets can be provided from boxes already installed; for instance, a pilot light, switch and outlet for an iron may be installed in the same single sidewall box which previously housed only an outlet, or a pilot light may be added to the remote control switches of cellar and attic circuits. Parts are of bakelite.—Electrical West, Oct. 1, 1932.

▼

Foot-Candle Meter

Built especially for salesmen's use by Weston Electric Instrument Co., a pocket-size foot-candle meter has been calibrated to read directly on three ranges: 50,250 or 500 foot-candles. One cell is used as an adjustable light collector, with readings appearing on a scale 2.36 in. long. Housed in black moulded cases with hinged cover and carrying handle. List price, $50.—Electrical West, Oct. 1, 1932.

▼

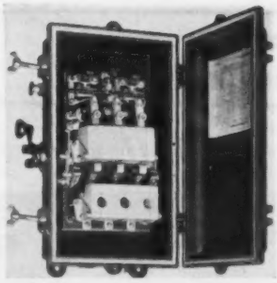
Split-Phase Motors

Century Electric Co., St. Louis, has added new ratings to its line of split-phase motors, and now supplies them in ratings from 1-60 to ¼ hp. Thick-walled bearings are machined from phosphor bronze castings. End brackets of grey cast iron designed to protect motor from falling objects, dust or dripping water. —Electrical West, Oct. 1, 1932.

▼

"Ivoryglow" Unit

The F. W. Wakefield Brass Co., Vermilion, Ohio, has announced a semi-indirect, socket-suspension lighting unit, trademarked "Ivoryglow." A new urea-formaldehyde molding compound has been used in forming the reflector, producing a unit said to be light in weight, non-shatterable, impervious to moisture, of high reflection value and of good appearance. Suspended by three strands of ball chain adjustable to bring the bowl in desired position with relation to lamp. —Electrical West, Oct. 1, 1932.

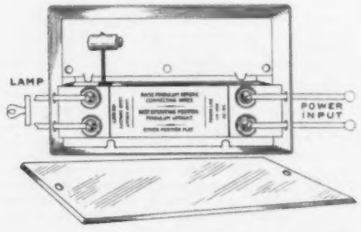


Combination Starters

A.c. combination starters of water- and dust-tight construction in the cast-iron type are announced by Square D Co., Industrial Controller Division, Milwaukee. Intended for use in damp or dusty locations and corrosive atmospheres, such as flour and starch mills, cement plants, foundries, packing plants. Not explosion proof. Built in two sizes, furnished fusible or non-fusible.—Electrical West, Oct. 1, 1932.

▼

Actionizer



Actionizer Industries, Ltd., Emeryville, Calif., is marketing a unit for interrupting electric circuits of 110 to 120 volts a.c. to a maximum of 150 watts, and 110 to 120 volts d.c. to a maximum of 75 watts, with an adjustable rate of interruption which easily may be varied between 200 and 500 interruptions per minute. Unit is designed for flashing signals and advertising displays. For use with non-inductive loads. — Electrical West, Oct. 1, 1932.

Trade Literature

◖ WELDER—The Lincoln Electric Co., Cleveland, has issued a booklet on their "Shield-Arc" welder, describing its construction and uses.

◖ HOTPOINT CATALOG—General Electric Co., Bridgeport, Conn., has published its revised heating devices catalog (17-2125) describing its toasters, waffle irons, percolators, irons, hotplates, etc. Also ready for distribution are an additional folder on the same appliances (17-2126) telling the sales story, and a resale cost sheet (MD-99) for the same articles.

◖ THERMO-REGULATOR—A pamphlet describing the new sensitive control thermo-regulator, product of Hiergesell Bros., Philadelphia, is now being distributed.

◖ YOUNGSTOWN—"What we make" is the title of a booklet just issued by The Youngstown Sheet & Tube Co., Youngstown, Ohio.

◖ STANDARD RANGES—Catalog No. 32 of The Standard Electric Stove Co., Toledo, Ohio, just off the press, lists all the products of that company as well as accessories and repair parts.

◖ WIRING DEVICES—Pass & Seymour, Inc., Syracuse, N. Y., has prepared for distribution catalog No. 31, on the P&S-DESPARD line of wall plate merchandise. It also contains revised data on other P&S products.

◖ G.E. PUBLICATIONS—Recent General Electric Co., Schenectady, releases include:

GEA-1366: Small a.c. hoist motors.
FL-102: General Electric oil furnace.
B-4073: "How to Light Your Home."

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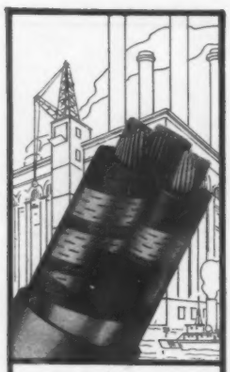
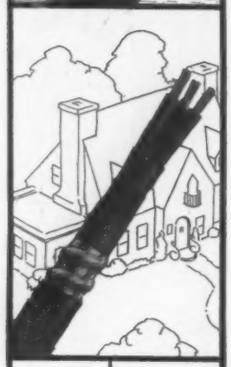
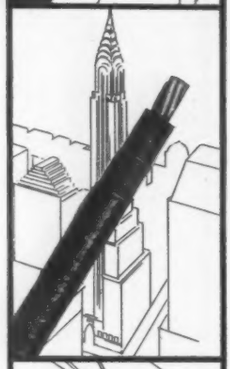

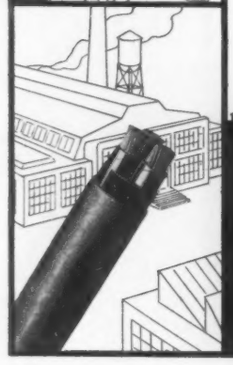

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Service up to
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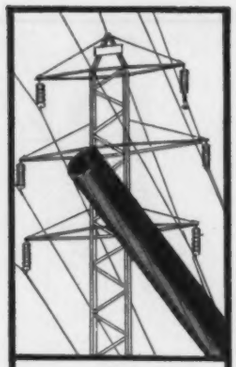
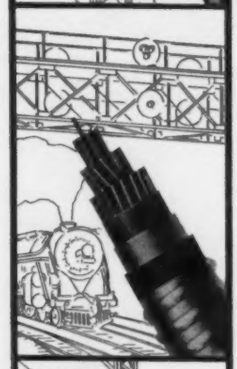
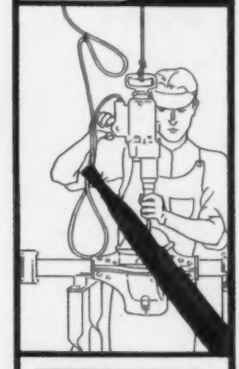
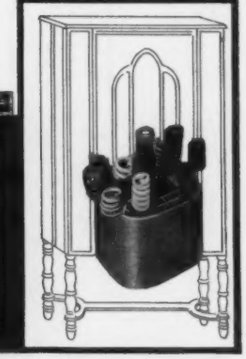
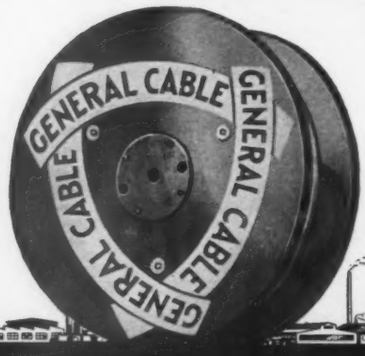



A STANDARD OF QUALITY FOR HALF A CENTURY

1882 1932



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Steam Electric Generating Plants
Sub Stations
Sub Stations & District Offices
Steam Electric Generating Plants & District Offices
220000 Volt Transmission Lines
60000 Volt Transmission Lines
Proposed 220000 Volt Transmission Line
SYSTEM MAP SHOWING PRINCIPAL POWER LINES OF SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIFORNIA
PACIFIC OCEAN

PROTECTED AT 16 POINTS. *Locations of power plants, switching stations and distributing centers which depend on Exide control bus and emergency lighting batteries are encircled on this map of the Southern California Edison Co.'s system. A population of more than three million is assured reliable service!*

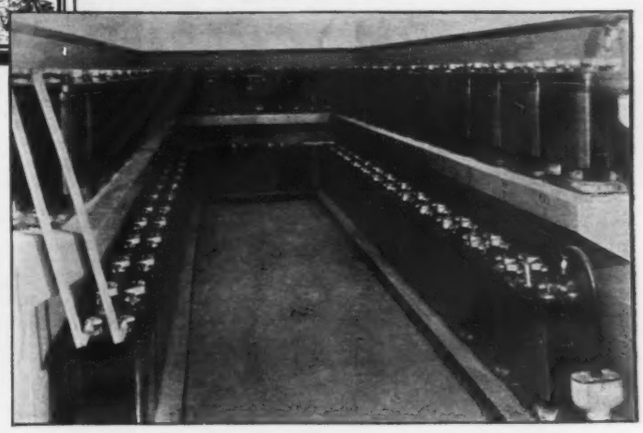
Dependable batteries assure protected service for huge system of Southern California Edison Company

AN area of 55,000 square miles—equivalent to the size of England—is served through one gigantic system by the Southern California Edison Company. It's the most highly electrified section in the world!

For protection at all times, this system relies on Exide. At sixteen important plants and sub stations—from Los Angeles to Big Creek (see map)—these batteries supply dependable current for control bus operation and emergency lighting.

Almost all the electric light and power companies in the country put their trust in Exide. They know from experience that this battery gives long life, unfailing performance, and economical operation.

Another important point—when you buy an Exide, you get nearly half a century's experience in battery building for every purpose.



A 60-cell FMG0 Exide Chloride Battery 560 amp. hr. capacity, typical of the ones recently installed as renewals at Magunden Sub Station and Big Creek No. 3 hydro-electric generating station of Southern California Edison System.

Exide BATTERIES

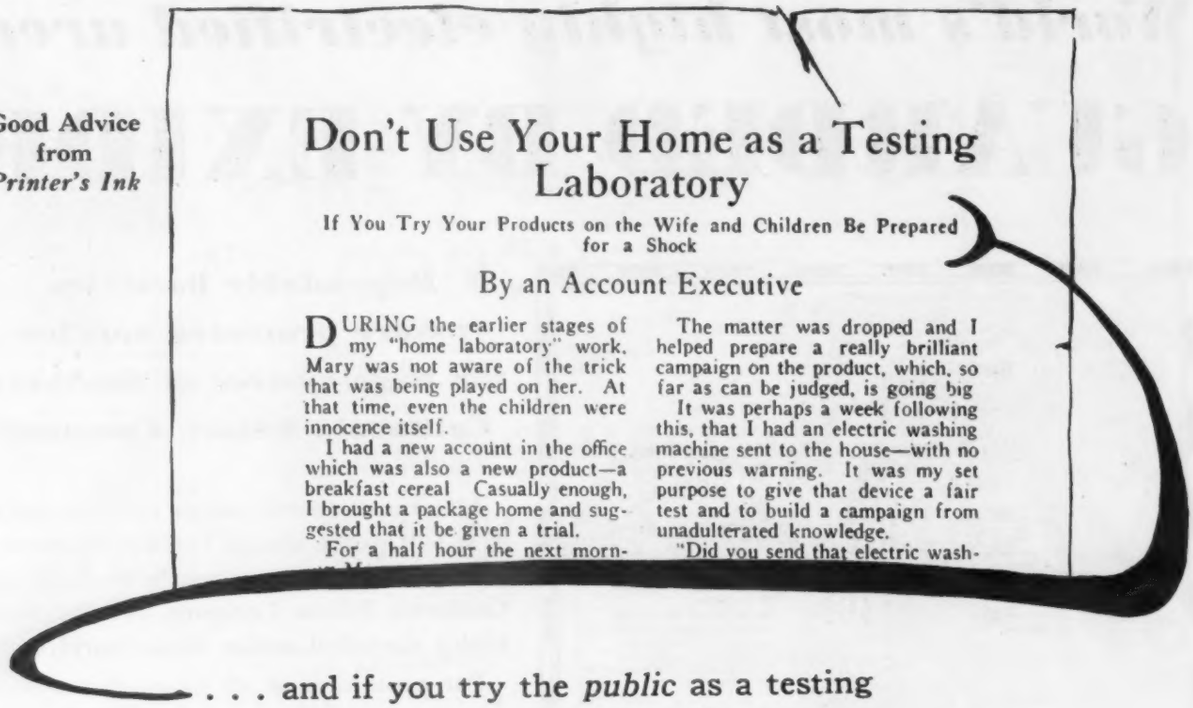
THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

SAN FRANCISCO LOS ANGELES SEATTLE

THE WORLD'S LARGEST MANUFACTURERS OF STORAGE BATTERIES FOR EVERY PURPOSE

Exide Batteries of Canada, Limited, Toronto

Good Advice from *Printer's Ink*



Don't Use Your Home as a Testing Laboratory

If You Try Your Products on the Wife and Children Be Prepared for a Shock

By an Account Executive

DURING the earlier stages of my "home laboratory" work, Mary was not aware of the trick that was being played on her. At that time, even the children were innocence itself.

I had a new account in the office which was also a new product—a breakfast cereal Casually enough, I brought a package home and suggested that it be given a trial.

For a half hour the next morn-

The matter was dropped and I helped prepare a really brilliant campaign on the product, which, so far as can be judged, is going big

It was perhaps a week following this, that I had an electric washing machine sent to the house—with no previous warning. It was my set purpose to give that device a fair test and to build a campaign from unadulterated knowledge.

"Did you send that electric wash-

. . . and if you try the *public* as a testing laboratory, you may receive a worse jolt.

There's a time and *place* for everything . . . including testing.

You name the time . . . . . .

Know— by Test

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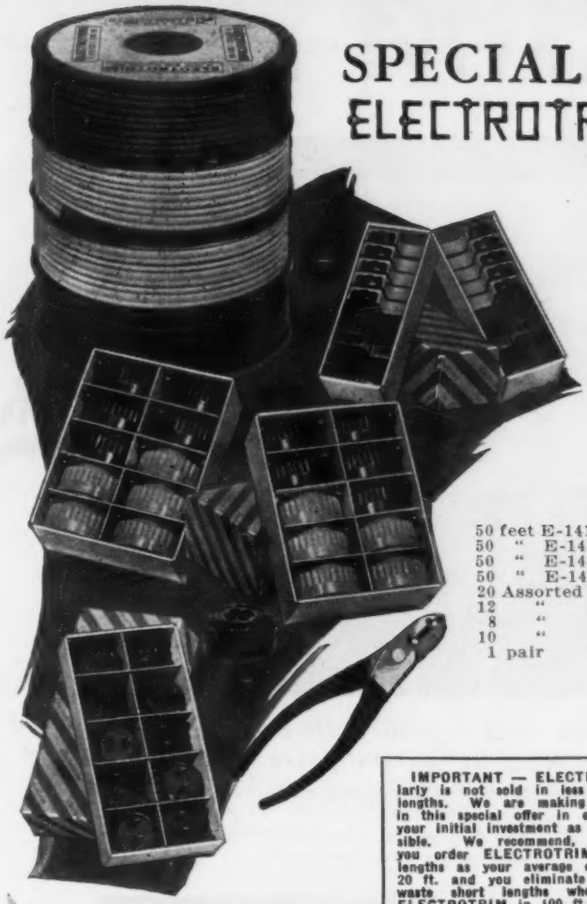

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You Make 35% PROFIT

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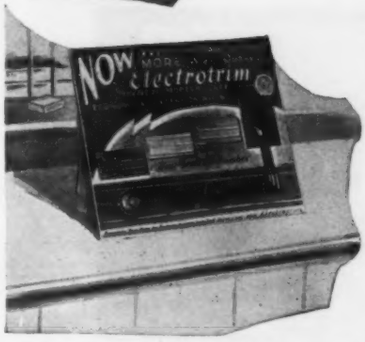
ASSORTMENT CONSISTS OF:

50 feet	E-141-2 ¾" width	No. 14 Oak ELECTROTRIM	$14.00 C Ft.	$7.00
50 "	E-142-2 ¾" "	No. 14 Mahogany "	14.00 C Ft.	7.00
50 "	E-143-2 ¾" "	No. 14 White "	14.00 C Ft.	7.00
50 "	E-144-2 ¾" "	No. 14 Ivory "	14.00 C Ft.	7.00
20	Assorted No. E-14-1, 2, 3, L Corner Caps			2.00
12	" No. E-14-4, 5, 6, PP Feed Thru Outlets			4.20
8	" No. E-14-7, 8, 9, P End Outlets			2.80
10	" No. E-120 P, S Attachment plugs			1.50
1 pair	No. E-14-0 Electrotrim cutters			.75
				39.25
	Contractor Dealer's Discount, 35%			13.75
				$25.50

IMPORTANT — ELECTROTRIM regularly is not sold in less than 100 ft. lengths. We are making an exception in this special offer in order to make your initial investment as small as possible. We recommend, however, that you order **ELECTROTRIM** in 100 ft. lengths as your average orders will be 20 ft. and you eliminate possibility of waste short lengths when you have **ELECTROTRIM** in 100 ft. lengths.

Also included in deal are
FREE Advertising Folders
FREE Display Card
FREE Sample Cards

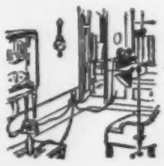


New Market Now Wide Open

Now you can reduce the cost of wall outlets ⅓ to ¾ and actually INCREASE your profits!

Forty Million homes and offices need additional wall outlets—and will they buy them at this new low price? Just sell ELECTROTRIM and you'll have your answer!

ELECTROTRIM is certain to be one of the fastest turnover items on the electrical contractor's shelf. Not a substitute for concealed outlets. ELECTROTRIM will be sold whenever concealed outlets are above the means of the purchaser.



Every Home Needs and Will Buy Electrotrim

Those who will profit most will be those who offer ELECTROTRIM *FIRST* . . . order your Introductory Assortment today . . . Find out for yourself what a fast moving, Big Profit item ELECTROTRIM is!

ELECTROTRIM, INC., UNION CITY, IND.

ELECTROTRIM, INC., Dept WE-4, Union City, Indiana

Rush me your SPECIAL INTRODUCTORY ELECTROTRIM ASSORTMENT TODAY.

Name.....

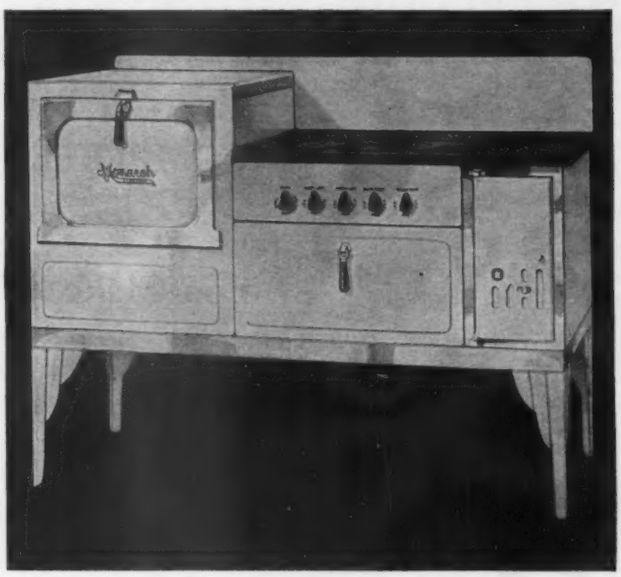
Address.....

SEND THESE ADDITIONAL QUANTITIES OF ELECTROTRIM:

MONARCH

Ranges that combine COLORFUL BEAUTY... *Important new features and* ATTRACTIVE PRICE

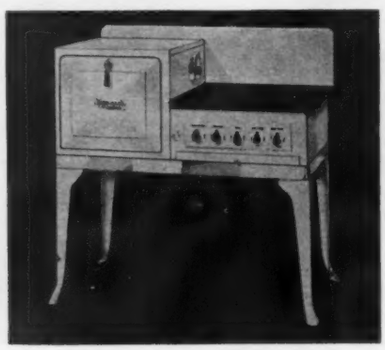
HERE are but three of the many models that make Monarch the most complete electric range line. Send for the catalog showing the full line with new low prices.



Monarch

An Outstanding Quality Model with built-in Kitchen Heater at a most attractive price

Model H17F, 17-inch enamel lined oven. 4 surface units. Built-in firebox suitable for coal or wood. Regularly equipped with new type automatic temperature control with illuminated dial which eliminates relay. Roomy utility drawer. Marbleized top of stain-proof porcelain. All porcelain enamel body in choice of white, Nile-Green or Ivory-Tan. Time-control (electric) optional.



A popular seller in the medium price class

Model H37F, with 17-inch oven, aluminum lined. Automatic temperature control standard equipment. Electric timer-clock control optional. Nile, Ivory or white, with rich, green marbleized top of stain-proof porcelain. Built-in coal-wood firebox.

A price leader to be proud of . . .

Model 45F, with 15-inch enamel lined oven and new type temperature control having illuminated dial and eliminating relay. Four surface units. All enamel in choice of white or two standard Monarch tints and stain-proof marbleized porcelain top.

MALLEABLE IRON RANGE CO., 3117 LAKE STREET, BEAVER DAM, WIS.

Central Station Representatives: ..... **Chamblin-Thomas Company, 639 Mission Street, San Francisco, California**
Dealer Representative: ..... **Glenn L. Brown, 3515 Kempton Place, Oakland, California**
Northwest Representative: ..... **G. A. Lieser, 1218 17th Avenue North, Seattle, Washington**

They Will Buy Useful Things First

As we emerge from the period of restricted buying, let's remember that luxury goods will have to wait until people supply themselves with useful things.

With new habits of thrift, they will appraise the merchant's offerings and select those articles which assure the greatest value for the money expended.

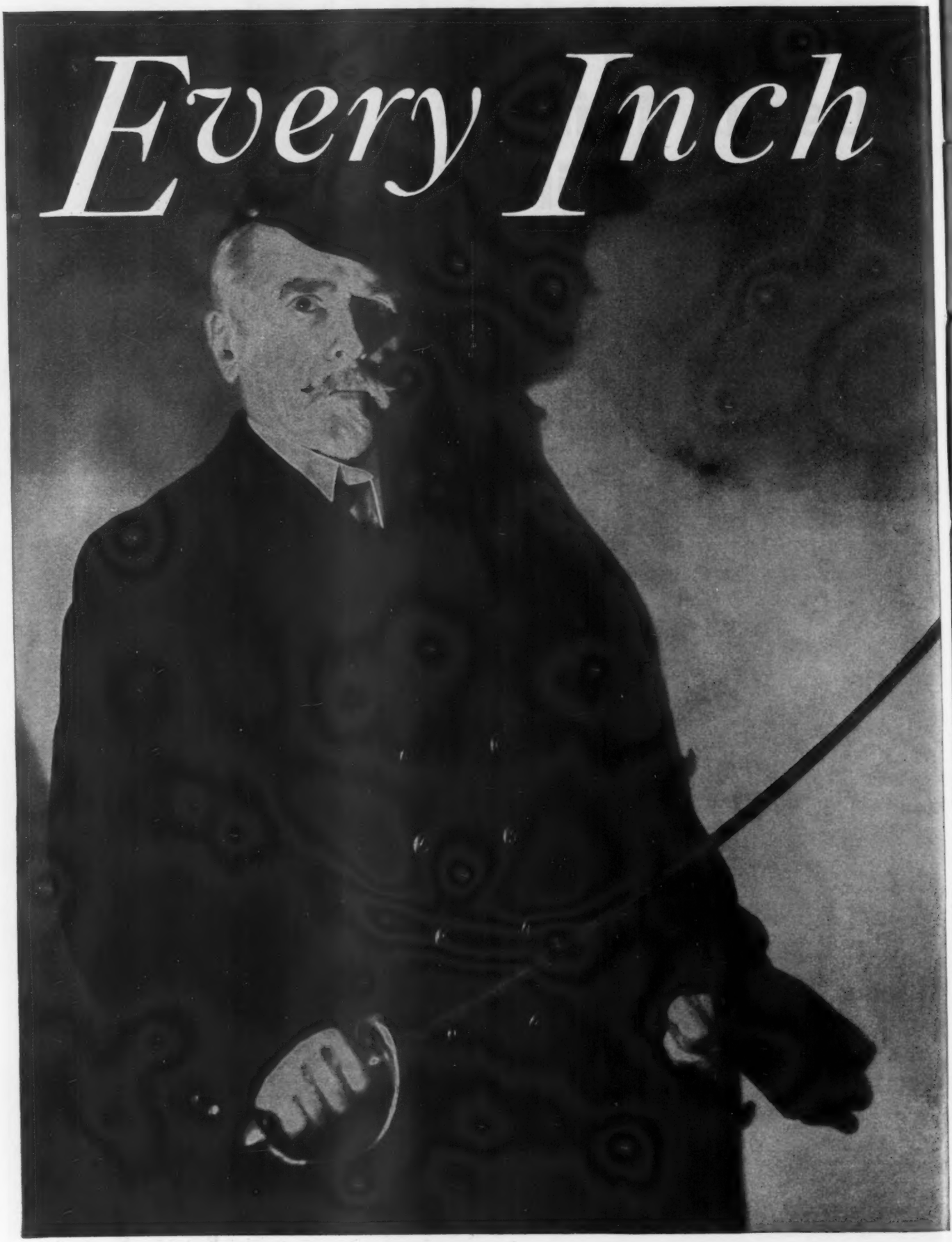
Electrical Appliances of All Sorts
Will Be on the Preferred List

Thousands of women have said, "I want a toaster, or a washer, or a range, or a refrigerator, as soon as things pick up."

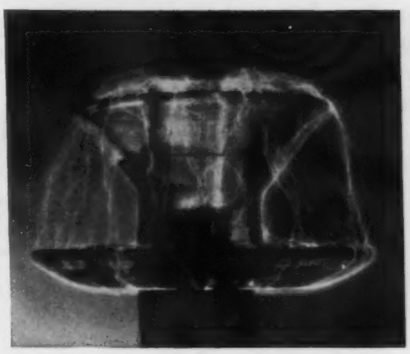
Let's tell them, "Things *are* picking up. Get that toaster, or washer, or range, or refrigerator, *now* and begin reaping the benefits that its ownership will bring to you."

Tell Them—Then Sell Them

Southern California Edison Company Ltd.


Every Inch

a Soldier



The top of this PYREX *Insulator was ground down to 1/5 its normal thickness . . . and here it is on test . . . taking three times its rated voltage.*

IT'S the inherent qualifications for duty . . . the inbred tenacity for service . . . that wins whole-hearted endorsement and appreciation of worth.

"A soldier to the last fraction of an inch" expresses the quality and tenacity for service of PYREX Brand Insulators. Withstanding the shocks of repeated attacks of power arcs, your PYREX Insulators will *carry the line* as long as a fraction of its thickness remains.

PYREX Power Insulators are available for operating voltages up to 66 kv.

They are one-piece, non-porous, non-crystalline . . . one material all the way through. They have high puncture value . . great resistance to power arcs, low temperature rise . . . a rugged, non-crazing insulator, unaffected by atmospheric conditions . . . an insulator that can be inspected clear through to the pin . . . they are in fact *"every inch"* an insulator.

"PYREX" is a trade-mark and indicates manufacture by Corning Glass Works

CORNING GLASS WORKS • CORNING, N. Y.

Western Representatives

San Francisco-Los Angeles	Seattle	Phoenix	Denver
W. W. Kirk	T. S. Wood	J. E. Redmond	J. Q. Lalor

PYREX INSULATORS

THE CONDUIT THAT MAKES YOUR DOLLAR BIGGER

When the label says—"Fretz-Moon"—you may be sure of full dollar value—of faithful service in preserving the electrical wiring for the life of the building.

To all those who have used it, Fretz-Moon Conduit is well known for its ease of installation. Every length is uniform—straight, perfectly round, even in wall thickness and uniform in metal structure. The patented "continuous" process of manufacture protects its ductility and prevents hard or burnt spots.

Fretz-Moon Conduit is easy to bend to all requirements, easy to cut and thread, and easy to fish with wiring. Every length is furnished with accurate, sharp, clean threads on both ends, with a smooth-running coupling on one end. All brands are finished inside with a special enamel that will not crack or chip under severe bending.

Look for the Fretz-Moon Label—orange on ENAMELITE (black enameled); red on ELECTRO GALVITE (electro-galvanized); blue on HOT DIPPED GALVITE (hot galvanized)—it's assurance of high-quality work at low cost.

Write for a copy of the Fretz-Moon Conduit Booklet. It presents some unusual facts.

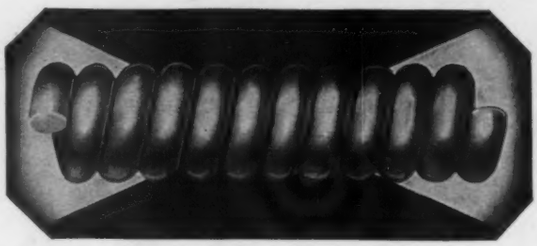
FRETZ-MOON TUBE CO., INC.
Butler, Penna.

FRETZ-MOON
RIGID CONDUIT

WESTERN REPRESENTATIVES

H. F. Boardman, Inc.,
400 California Reserve Bldg.,
Los Angeles, Calif.

E. E. Buerkel,
726 Mission St.,
San Francisco, Calif.



Galvanized Telephone Wire and Steel Strand

Crapo Galvanized Wire can be wrapped around its own diameter without injury to its pure zinc coating....That is one of a number of reasons why **Crapo** Galvanized Telephone Wire and Strand can be depended upon to reduce maintenance cost.

Look for the **Crapo** Seal!

Indiana Steel & Wire Co.
Muncie, Indiana

INDIANA STEEL & WIRE CO. Crapo Galvanized MUNCIE IND

Crapo
GALVANIZED PRODUCTS

COIL WINDING

Dependable coil winding service is now available to Pacific Coast users. Transformer, solenoid and compensator coils as well as coils to meet special requirements. Let us discuss your coil problems.

Since 1923

Jeffries transformers have been giving dependable service.

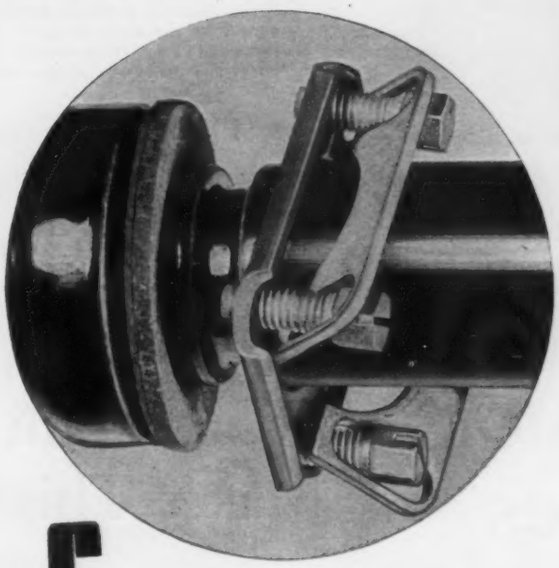
Jeffries Transformer Company

5706 Long Beach Ave., Los Angeles, Calif.
Electric Agencies, 2059 Webster St., Oakland, Calif.

Stud-type transformers

built by Wagner **are equipped with a type of stud and bushing that can be quickly installed, or removed in the event of bushing failure . . . without fuss . . . without splicing cable leads . . . without lowering the transformers from platforms or poles. All that's necessary is a screw-driver to loosen four set-screws . . . plus a wrench to disconnect the cables. Thus they**

reduce installation and maintenance costs, economies always welcomed by central station operators



The bushing clamping assembly consists of two clamps, a retainer and four set-screws. The two clamps engage a groove in the bushing and are held inside the retainer when pressure is applied on the set-screws against the tank wall.

It is a very simple matter to loosen this clamping assembly and thus permit removal of the bushing: (1) loosen the screws — do not remove them completely; (2) part the clamps far enough to clear the bushing; (3) slip the entire assembly off the bushing; (4) slip the bushing thru the opening.

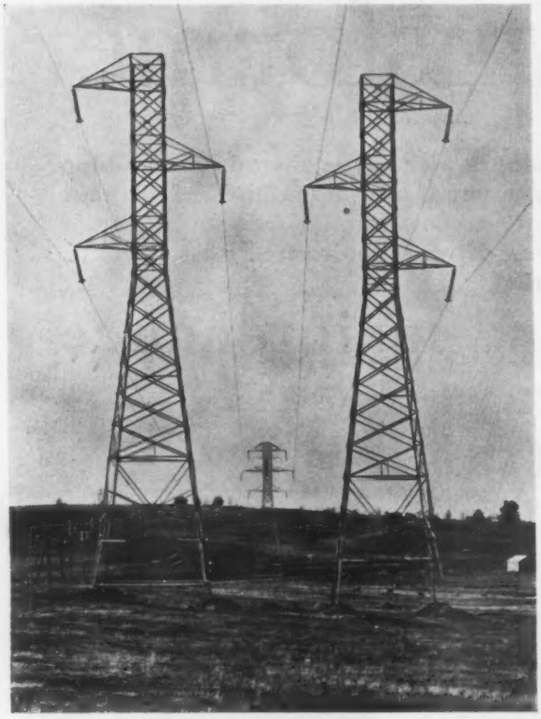
It's done in a jiffy—and all that's required is a screw-driver to loosen the screws . . plus a wrench to remove the transformer cable.

Wagner Electric Corporation

6400 Plymouth Avenue, Saint Louis, U.S.A.

TRANSFORMERS MOTORS FANS BRAKES

T-332-1



220-kv. Transposition Towers on Mokelumne River Line

STEEL Transmission Structures

The wide experience of Pacific Coast Steel Corporation in the design and fabrication of all types of steel transmission structures assures scientifically correct and economically built poles, towers and substations.

Consult Pacific Coast Steel Corporation on your difficult transmission structure problems. Our engineering department will gladly make a study of the conditions involved, and submit recommendations.

PACIFIC COAST STEEL
CORPORATION
Subsidiary of Bethlehem Steel Corporation

General Offices: San Francisco

District Offices: Seattle, Portland, Los Angeles, Honolulu
Export Distributor: Bethlehem Steel Export Corporation
25 Broadway, New York City

39 *years' service*

has proved the superiority of

ORANGEBURG FIBRE CONDUIT

THE thousands of miles of Orangeburg Fibre Conduit in use today vouch for its dependability in protecting underground circuits. Supplied in uniform lengths, it is easy to install, costs little to handle. Stocks carried at the manufacturing plants in Orangeburg, N. Y.; Richmond, Ind., and in all larger cities insure prompt shipments.

The Fibre Conduit Co.
ORANGEBURG, N. Y.

SOLE SELLING AGENT Johns-Manville 292 Madison Ave., N. Y.C.

What Manufacturer Makes This?

Looking for the name and address of the maker of some electrical appliance

?

Want to know the name of the jobber or representative in your territory

?

Like to arrange for representation of some appliance

?

All this is part of Electrical West's service. A phone call or letter to 883 Mission St., San Francisco, may solve your problem.

ELECTRICAL WEST

883 Mission St. **San Francisco**

Dnieper River at flood stage

•

500,000 second feet passing over the 2000 foot spillway

Dnieprostroy Dam — Power house in left background.

World's largest Hydro-electric plant.

Nine Newport News turbines rated at over 750,000 horsepower installed here.

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

90 BROAD STREET, NEW YORK, N. Y. NEWPORT NEWS, VIRGINIA

Fibre and Bakelite Specialties

Washers
Gear Blanks
—
All Special Shapes

SPAULDING Fibre COMPANY

Manufactured from Spauldite and Spaulding Fibre

Complete Pacific Coast Stocks

IRVINGTON INSULATION — Irvington Cambrics, Tapes and Varnishes

HOPE TRADE MARK MADE IN U.S.A. — Hope Tapes and Sleevings

THREE E — Three E Disconnecting Switches and Bus Supports

California and Southwestern Representative

C. D. LaMOREE

LOS ANGELES
1325 San Julian St.

SAN FRANCISCO
1889 Mission St.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., required by the Act of Congress of August 24, 1912, of Electrical West, published monthly, with an extra edition on May 15th, at San Francisco, Calif., October 1, 1932.

State of California,
County of San Francisco—ss.

Before me, a notary in and for the state and county aforesaid, personally appeared G. C. Tenney, who, having been duly sworn according to law, deposes and says that he is the Editor of Electrical West, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:
Publisher, McGraw-Hill Company of California.....
883 Mission St., San Francisco
Editor, G. C. Tenney.....883 Mission St., San Francisco
Managing Editor, none.
Business Manager, Roy N. Phelan. 883 Mission St., San Francisco

2. That the owners are: Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.

McGraw-Hill Company of California, San Francisco, Calif; McGraw-Hill Publishing Company, Inc., New York City; J. H. McGraw, New York City; Edgar Kobak, New York City; N. A. Bowers, San Francisco, Calif; G. C. Tenney, San Francisco, Calif.; H. C. Worden, San Francisco, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities, are: None.

G. C. TENNEY, Editor

Sworn to and subscribed before me this 19th day of September, 1932.

[Seal] MARGARET KEENE WHITMORE
My commission expires November 22, 1932.

First Reader

for ELECTRICAL MANUFACTURERS

Q.—Why are October, November and December good months for advertising?

A.—Because power companies are making commercial sales plans for the next year; because engineering and construction departments are making budgets for the next year; because dealers are buying for Christmas trade.

Q.—Why can't I have my salesmen see all these men?

A.—You can, but personal selling is mighty expensive when there are so many calls to make before the job is done. Sales seldom are made on the first call.

Q.—There's no use trying to sell. Power companies and dealers aren't buying as much as they used to.

A.—Right. And there are fewer manufacturers trying to sell them, so that makes it even.

Q.—The public is spending only for necessities. Why should I spend money for advertising electrical merchandise.

A.—Some companies are making good money right now and they aren't selling necessities. Evidently the public is buying just as it always has. You are selling some of your products and your competitors are selling some of theirs. By advertising, you will build your sales by taking sales away from competitors in the electrical field, from competitors in other fields, or by moving the customer to spend money on your product which he wouldn't have spent otherwise.

Q.—How do I know the people in the West will buy electrical appliances?

A.—They always have. They buy more ranges and water heaters and other appliances, have more wired homes and use more electricity, per capita, than the people of any other part of the country. The per capita buying power is greatest in the West, so they can best afford to spend money for anything at all.

Q.—Well, even if I advertise to the West, how am I to know what publication to use?

A.—ELECTRICAL WEST reaches every one of those power company officials who sit in on sales planning and budget making. And it reaches the largest and best of the dealers, those who do the biggest share of the selling. Not only reaches them, but they read it; they want it well enough to pay for it in advance. You can reach all of those people in the one magazine.

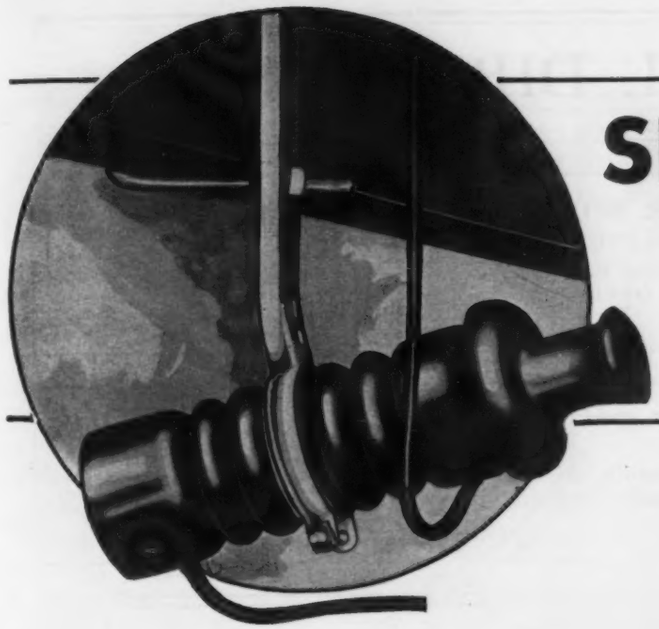
Q.—But it must cost a lot of money to reach all those people. Can I afford it?

A.—It costs only a couple of pennies per person; how can you beat that, being sure at the same time that your message is going to be read? You can't buy any other comparable advertising at costs so low?

Electrical West

ABC——ABP

883 Mission St. San Francisco



SERVICEABLE.. STURDY.. SAFE

Extruded plastic wet process, porcelain bayonet handle with high flash-over value fully protects the linemen when opening or closing the cutout.

This latch securely locks the cartridge to the bayonet handle. It affords a quick, simple means of dismantling the bayonet for re-fuseing or replacing with a disconnect blade.

Cylindrically shaped upper contact cannot spring out of shape. Contacts can be wiped by rotating handle without removing bayonet from cutout.

The wedge of the explosion chamber is forced into upper contact when fuse blows, locking the bayonet into cutout. The taper of wedge diverts the force of the recoil against the upper contacts.

A non-warping fuse tube of high dielectric strength made of tough horn fibre is completely housed against weathering.

Lower contact is a machined copper bushing that fits tightly against shoulder in cutout, preventing the metallic gases from entering the cutout.

Kearney Products: Screw Type Anchors and Expansion Anchors; Solderless Connectors; Double Duty Cutouts; One and Two Insulator Fuse and Disconnect Switches; Fuse Link Boxes; Fuses; Fuse Pullers; Pole Top and Quick-Break Gang Operated Disconnect Switches; Guy Wire Clips and Strand Bands; Guy Guards; Sleeve Twisters; Live Line Tap-off Clamps; Grounding Equipment; Live Line Tools and Accessories; Economy Cable Clamps; Underground Boxes; Hitemeters; Cable Ring Saddles; Duct Rods; Dead-End Service Clamps; Conduit Straps.

JAMES R. KEARNEY CORP.
4224-42 CLAYTON AVENUE • ST. LOUIS, MO.
Factories: St. Louis, Mo. • • Taylorville, Ill. • • Toronto, Canada

KEARNEY DOUBLE DUTY CUTOUTS

MAYDWELL & HARTZELL

INCORPORATED
San Francisco, 158-11th St. • Los Angeles, 455 Colyton St.
FACTORY REPRESENTATIVES OF JAMES R. KEARNEY CORPORATION PRODUCTS

PROFESSIONAL DIRECTORY

BYLLESBY
ENGINEERING & MANAGEMENT CORPORATION
Wholly-owned Subsidiary of
Standard Gas and Electric Company
231 South LaSalle Street, Chicago
New York Pittsburgh San Francisco

ARTHUR R. KELLEY
CONSULTING ENGINEER
Reports and Valuations, Public Utility
Industrial Properties
Edison Bldg. Los Angeles

Your card here builds favorable prestige for you. The cost is extremely small. The value is great as a business aid.

ELECTRICAL TESTING LABORATORIES
Electrical Photometrical, Chemical and Mechanical Tests. Inspection of Materials and Apparatus at Manufactory
80th St., and East End Ave., New York

In any line, a specialist does the best job.
Why not consult the firms listed here on your next undertaking?

THE J. G. WHITE ENGINEERING CORPORATION
Engineers—Contractors
Oil Refineries and Pipe Lines, Steam and Water Power Plants, Transmission Systems, Hotels, Apartments, Office and Industrial Buildings, Railroads.
43 Exchange Place New York

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Christmas Cards

ARE NOW ON DISPLAY
MORE BEAUTIFUL THAN EVER
AT TODAY'S NEW LOW PRICES

Electrical West is from the press of Neal, Stratford & Kerr

NEAL, STRATFORD & KERR
STATIONERS -:- PRINTERS -:- ENGRAVERS
521 Market St. SAN FRANCISCO 1169 Russ Bldg.

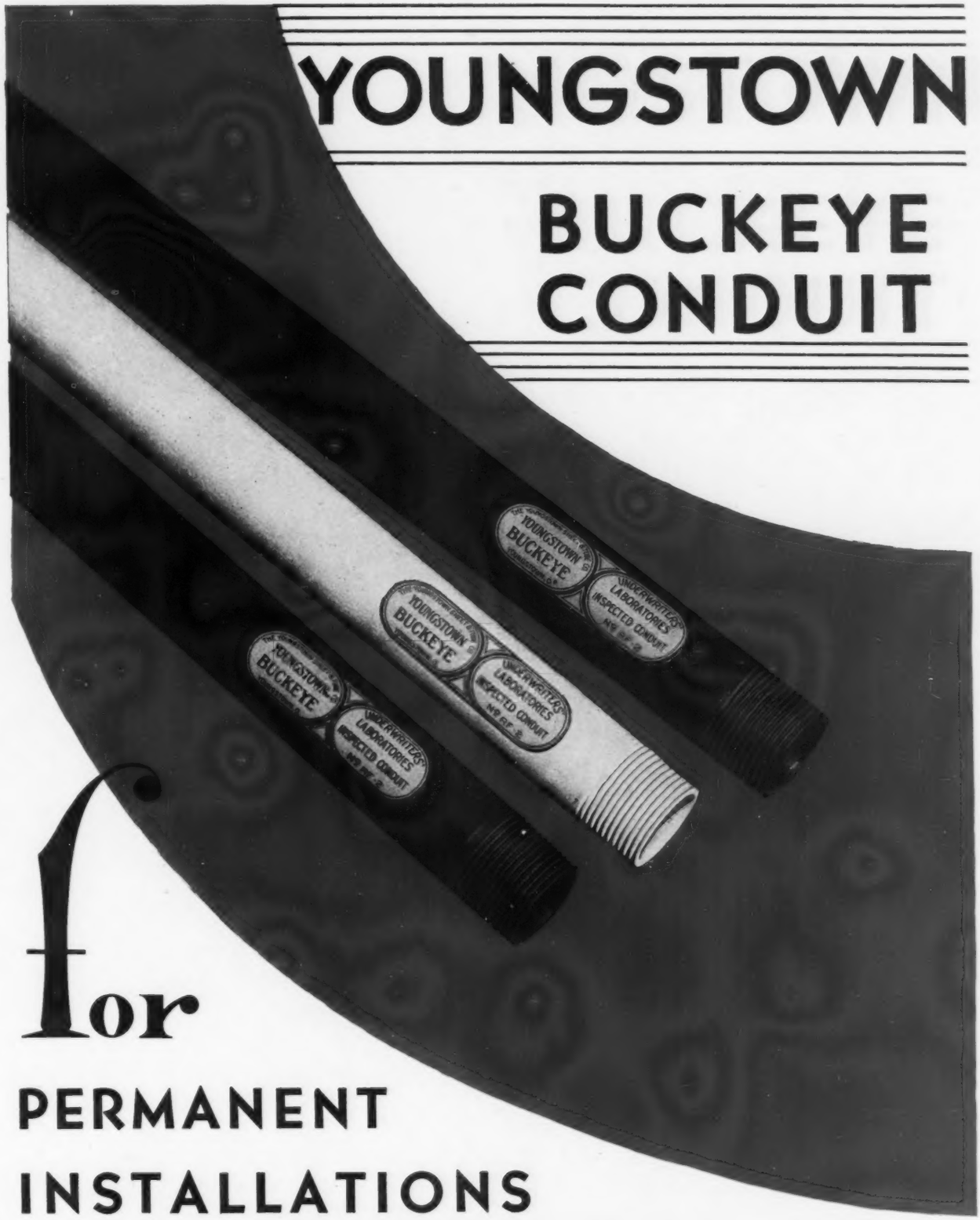
Bound Volumes

FOUR BOUND VOLUMES, containing issues of Electrical West from January 1 to June 1, 1932, inclusive, may be purchased by calling at or writing to the office listed below. These volumes are half-bound in red leather, gold lettered, fully indexed. They are suitable for libraries, either private or company, and may be had for $7.50 each.

ELECTRICAL WEST
883 Mission Street . . . . San Francisco

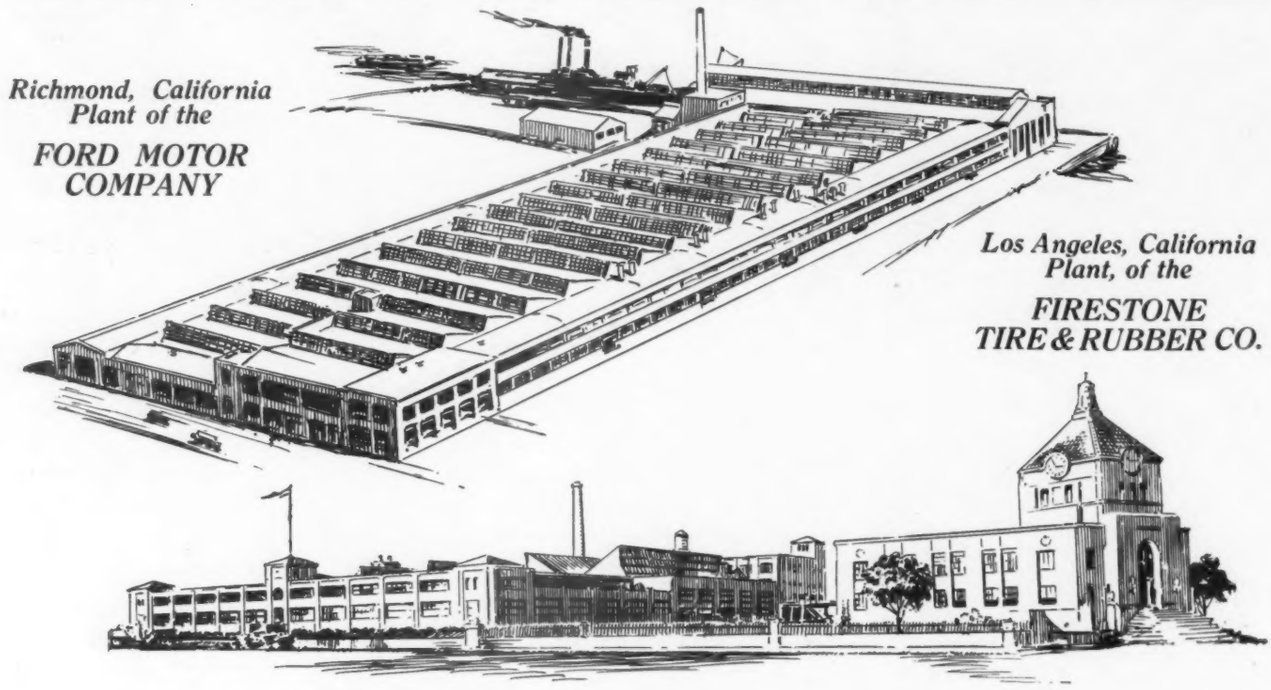
YOUNGSTOWN

BUCKEYE CONDUIT



for PERMANENT INSTALLATIONS

THE YOUNGSTOWN SHEET & TUBE CO.
GENERAL OFFICES YOUNGSTOWN, OHIO



Plant Visitations Give Business Public Practical Examples of Electrical Modernization

As a part of the activities of the Bureau's Committee on Industrial Modernization, visitations to modern industrial plants have played an important role in impressing the interested persons with the importance of up-to-date production methods and giving, at the same time, a practical demonstration of the use of electricity and electrical equipment in manufacturing. Invitations were sent to industrial engineers, plant managers, electrical contractors, jobber salesmen, oil field engineers, advertising and editorial men, heads of engineering colleges, members of the boards of education, presidents of all service clubs, officials of Chambers of Commerce, executives of banking institutions, administrative officials of local city governments, industrial agents of railroads, etc. The record of attendance at these visitations was very gratifying to not only the Committee and the Bureau, but to the officials of the plants as well, and the success of the visitations has warranted the wholehearted endorsement of the electrical industry. The guests, in each instance, devoted about half-of-a-day to going through the plants. Talks on Safety Features, Welding, Primary Switch Gear, Secondary Switch Gear, Power Service, Electrical Toolroom, Light & Power Distribution, Transformers, Quality Electric Materials, Electric Control, were given by men in the industry who were especially qualified to speak on their particular subjects. Special attention was directed to the primary voltage switch gear room, secondary switchboard room, transformer vault, boiler room, lighting, electric control, and other important classifications. A survey of the attendance at these plant inspections showed an interesting cross-section of guests from the various groups invited. Additional plant inspection tours are being planned for the near future.

Such projects as these emphasize the fact that America's industrial growth stands today a testimonial to the fact that men can accomplish more by organized cooperation than by the uncoordinated effort of individuals.

Pacific Coast

ELECTRICAL BUREAU

A non-profit organization supported by all branches of the industry as an advisory bureau to serve impartially all users of electricity

447 Sutter Street, San Francisco

Room M. 15 Edison Bldg. Los Angeles

848 Roosevelt Street Fresno

ELECTRICITY COSTS SO LITTLE IN CALIFORNIA